CHEESE FACTORY AND CREAMERY PLANS

WITH

SPECIFICATIONS

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CHEESE FACTORY AND CREAMERY PLANS

WITH SPECIFICATIONS

GENERAL

Specifications of the several works and material required in the erection of a according to the accompanying drawings.

These specifications, drawings with all writings thereon, together with the formally executed contract and including everything written or printed, shall constitute in their entirety the agreement between the parties.

In case of discrepancy, the figures shall always govern, regardless of what dimensions may measure according to scale.

The contractor shall make all necessary excavations, shall furnish all materials, except those for which it is specially mentioned that the owner shall furnish.

The contractor is to provide all materials and fix all masons', carpenters' and joiners' work of every kind, complete with all iron work, proper nails, spikes, screws, bolts, bars, hinges, locks, lock furniture and screws for same, etc., which may be requisite for carrying out the work.

Work of every description shall be executed with the greatest rapidity possible and in the *most workmanlike and substantial manner,* according to the true intent and meaning of these specifications and the drawings herein referred to and all work to be complete and delivered in perfect and undamaged condition without exception. All material to be the best of their respective kinds and to be at all times subject to inspection for approval or rejection and the contractor shall furnish to the owner such itemized bills for material used at such times as he may require.

The contractor is to allow other workmen to enter the building for the purpose of installing machinery, providing these do not interfere with his own operations.

The owner reserves the right by conferring with the contractor to modify or change the plans as he may see fit, adding to or deducting from the contract price a reasonable amount for all such changes, which amount to be agreed upon at the time of the change.

Should any alteration or extra work be necessary, the cost of same shall be mutually agreed upon by the owner, and the contractor, and an order for same signed by the owner, before such work is started; otherwise, no extra charge will be allowed.

The contractor must protect his work and material from the weather, etc. He shall be responsible for all delays, damage, injury or accident caused through any operation in his charge, and whether contract or extra work.

The contractor is to remove all rubbish when the building is finished and level the ground around the building.

Materials

Wood.—All lumber employed must be thoroughly dry and sound, without loose knots or shakes.

For the inside of ice chamber and refrigerator, spruce and hemlock are the best, in the order named. Pine is not suitable on account of its odour.

All lumber used should be dressed as well as tongued and grooved.

Unseasoned lumber must be carefully avoided. When building in winter, fires must be kept going so as to have all materials as dry as possible. This is very important, as dampness in insulation destroys its efficiency.

Paper.—All building papers used to be strictly odourless.

Damp-proof insulating papers can be procured in rolls of 500 to 1,000 square feet, 36 inches wide. The following are some of the brands that can be recommended, viz., " Neponset," " Hercules," " Ko-sat."

Tar paper must not be used.

Each layer of paper should lap four inches over preceding one. The layers should extend continuously around all corners. All breaks to be carefully covered.

Planer Shavings.—Shavings must be thoroughly dry, free from bark or other dirt. Shavings from some odourless wood, such as hemlock, spruce or white wood, to have the preference.

Shavings in compressed bales, weighing from 60 to 100 pounds, may be procured from most of the large planing mills.

Bales of shavings received in a damp condition should be opened, and the shavings exposed to the air and stirred occasionally until they are dry.

The spaces in the walls should be filled as the inside sheathing is being put on, and the shavings thoroughly packed.

About 8 pounds of shavings closely packed will be required for each cubic foot of space filled.

Cinders.—Coal cinders should be used wherever possible to cover the earth over area of refrigerator and in ice chamber floors in preference to sand or gravel.

All cement used in and about the work must be best grade Portland cement and the brand of same approved by the owner before being used.

Concrete Mixture for all Foundation Walls, Floors, etc.

Concrete mixture to be composed of one part approved Portland cement and eight parts of clean coarse gravel. This mixture may also be made of one part approved Portland cement, four parts clean sharp sand, mixed dry, then moistened with a minimum quantity of water and incorporated with four parts of coarse gravel or 2-inch broken stone.

Mixture for Finishing the Top of Floors.—One part approved Portland cement and two parts clean sharp sand.

PLAN No. 1

A COMBINED CHEESE FACTORY AND CREAMERY TO BE CONSTRUCTED OF HOLLOW CEMENT BLOCKS AND TILE. ICE CHAMBER, CURING ROOM AND REFRIGERATOR WALLS INSULATED WITH SHAVINGS.

Plates Nos. 1, 2, 3 and 4

Capacity and Equipment

Capacity.—This plan is suitable for the manufacture of both cheese and butter at the same time, but it is designed more particularly for the manufacture of cheese in summer and butter in winter. Its capacity is 26,000 pounds of milk for cheesemaking and about 1,000 pounds of butter per day. The combined factory located at Finch, Ont., which was constructed and formerly operated by the Dairy and Cold Storage Branch, Department of Agriculture, Ottawa, was built from this plan with hollow cement blocks.

Equipment.—To operate this factory efficiently a 30-horsepower boiler and a 10-horsepower engine should be installed.

A round galvanized iron tank 5 feet by 5 feet should be placed above the boiler room for cold water.

A round galvanized iron tank 30 inches in diameter by 40 inches deep may be placed under the stairway for hot water with the outlet high enough to discharge into pails sitting in the wash sink.

A steel whey tank 12 by 8 by 4 feet 6 inches deep is placed over the boiler room immediately over the supports mentioned in specifications. In the bottom of this tank near the end next wall, place two 2-inch outlets to fit 2-inch steam pipe.

A tin vat for skim-milk 6 by 3 by 2 feet 9 inches deep is placed alongside of the whey tank.

The cheesemaking room is planned for four 6,500-pound vats and cheese presses for 34 cheese.

The curing room, if fitted four shelves high, will hold 480 cheese.

The ice chamber will hold about 90 tons of ice.

In the creamery there is room for a milk-receiving vat, two cream ripeners, two separators and a churn.

SPECIFICATIONS

EXCAVATIONS

Excavate for the foundations of all outside walls to a depth of 3 feet below the ground level. (Ground level to be determined by the owner.) Excavate for foundation of all partitions to a depth of 18 inches below ground level. Excavate for boiler and engine foundations to a depth of 18 inches below ground level.

Excavate for the septic tank the space between the bath-room and refrigerator, 15 feet wide from the main wall of building to a depth of 7 feet 6 inches below the ground level.

Excavate for foundation of roof over front driveway to a depth of 3 feet below the ground level.

Excavate for the retaining walls on each side of the foundation for roof over driveway to a depth of 18 inches below the ground level.

Excavate for smokestack foundation 4 feet below the ground level.

Excavate for concrete pier to support ceiling of ice chamber 2 feet below ground level.

Excavate for 5 concrete piers in boiler room to support whey tank 18 inches square and 3 feet below ground level.

FOUNDATIONS

For Outside Walls.—Erect a concrete wall 18 inches wide at the base and 9 inches wide at the top with a depth of 3 feet below and 1 foot above the ground level. The slant to be on the outside of the wall except at the septic tank where the slant must be on the inside so as to leave the wall for the septic tank perpendicular. Adjoining the septic tank the foundation shall be 7 feet 6 inches below and 1 foot above the ground level.

For Roof over Front Driveway.—Erect a foundation 28 feet long, 3 feet below and 2 feet above the ground level, 15 inches wide at the base and 8 inches wide at the top. Slant on inside of wall. At each end of this foundation erect retaining walls 15 feet long, 12 inches thick at base and 8 inches wide at top, 18

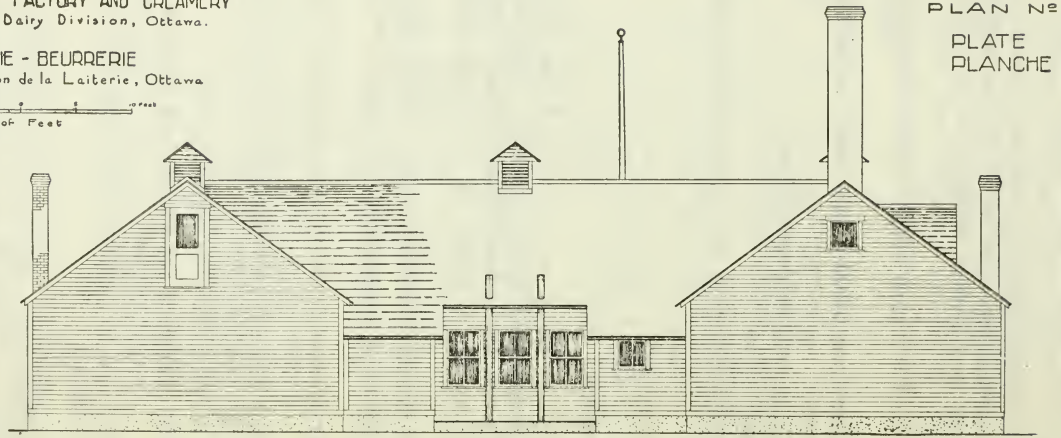
PLAN Nº 1.

COMBINED CHEESE FACTORY AND CREAMERY
Designed by the Dairy Division, Ottawa.

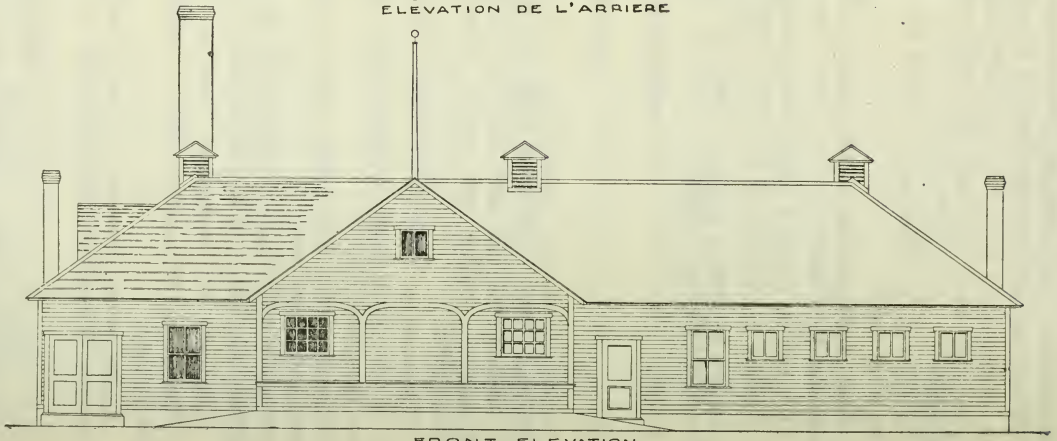
FROMAGÈRIE - BEURRERIE
Plan de la Division de la Laiterie, Ottawa

Scale of Feet

PLAN Nº 1.
PLATE I
PLANCHE

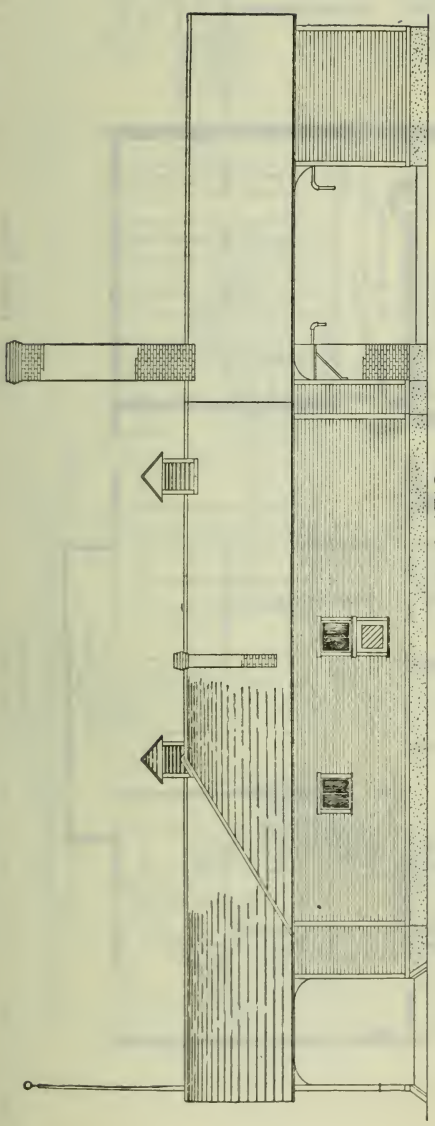


BACK ELEVATION
ELEVATION DE L'ARRIERE

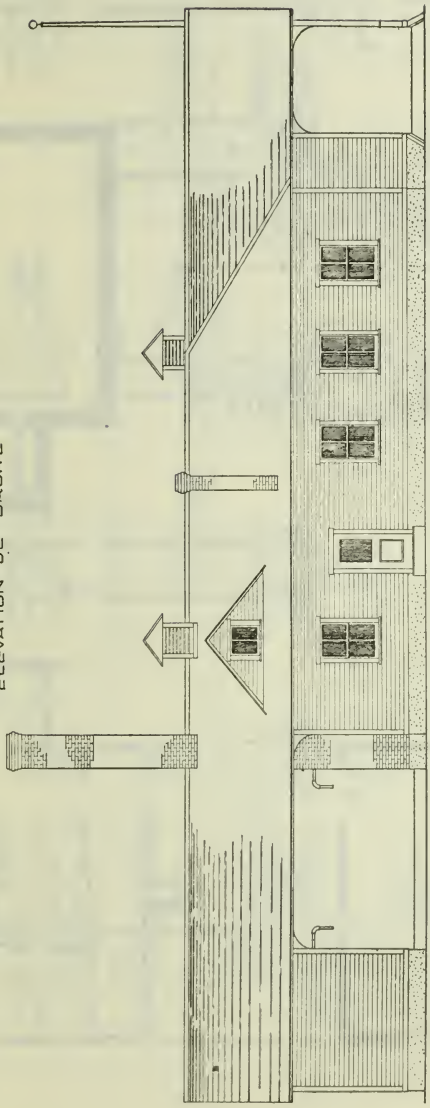


FRONT ELEVATION
ELEVATION DE FRONT

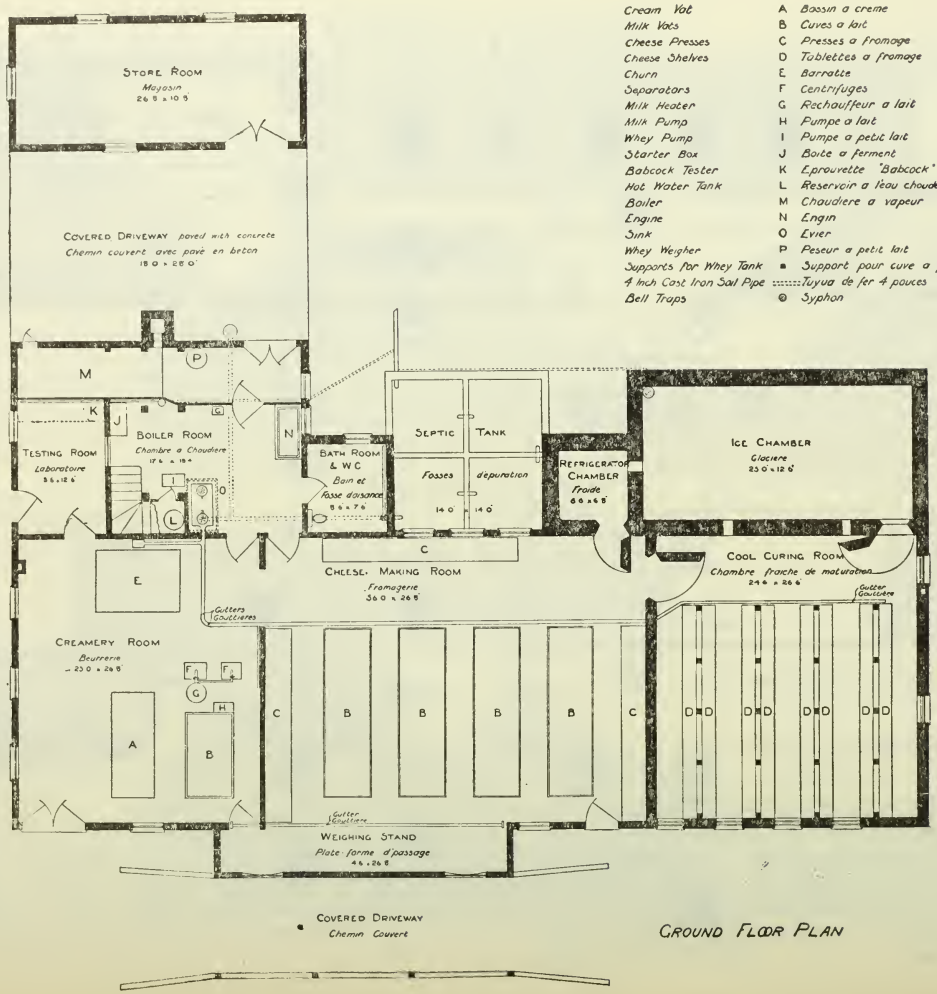
PLAN Nº 1. PLATE
PLANCHE II



RIGHT ELEVATION
ELEVATION DE DROITE



LEFT ELEVATION
ELEVATION DE GAUCHE



Cream Vat	A	Bassin a creme
Milk Vats	B	Cuves a lait
Cheese Presses	C	Presses a fromage
Cheese Shelves	D	Tablettes a fromage
Churn	E	Barratte
Separators	F	Centrifuges
Milk Heater	G	Rechauffeur a lait
Milk Pump	H	Pumpe a lait
Whey Pump	I	Pumpe a petit lait
Starter Box	J	Boite a ferment
Babcock Tester	K	Eprouvette "Babcock"
Hot Water Tank	L	Reservoir a l'eau chaude
Boiler	M	Chaudiere a vapeur
Engine	N	Engin
Sink	O	Evier
Whey Weigher	P	Peseur a petit lait
Supports for Whey Tank	▪	Support pour cuve a petit lait
4 Inch Cast Iron Soil Pipe	:::::::	Tuyau de fer 4 pouces
Bell Traps	◎	Syphon

PLAN Nº 1

PLATE
PLANCHE III

Scale of Feet.

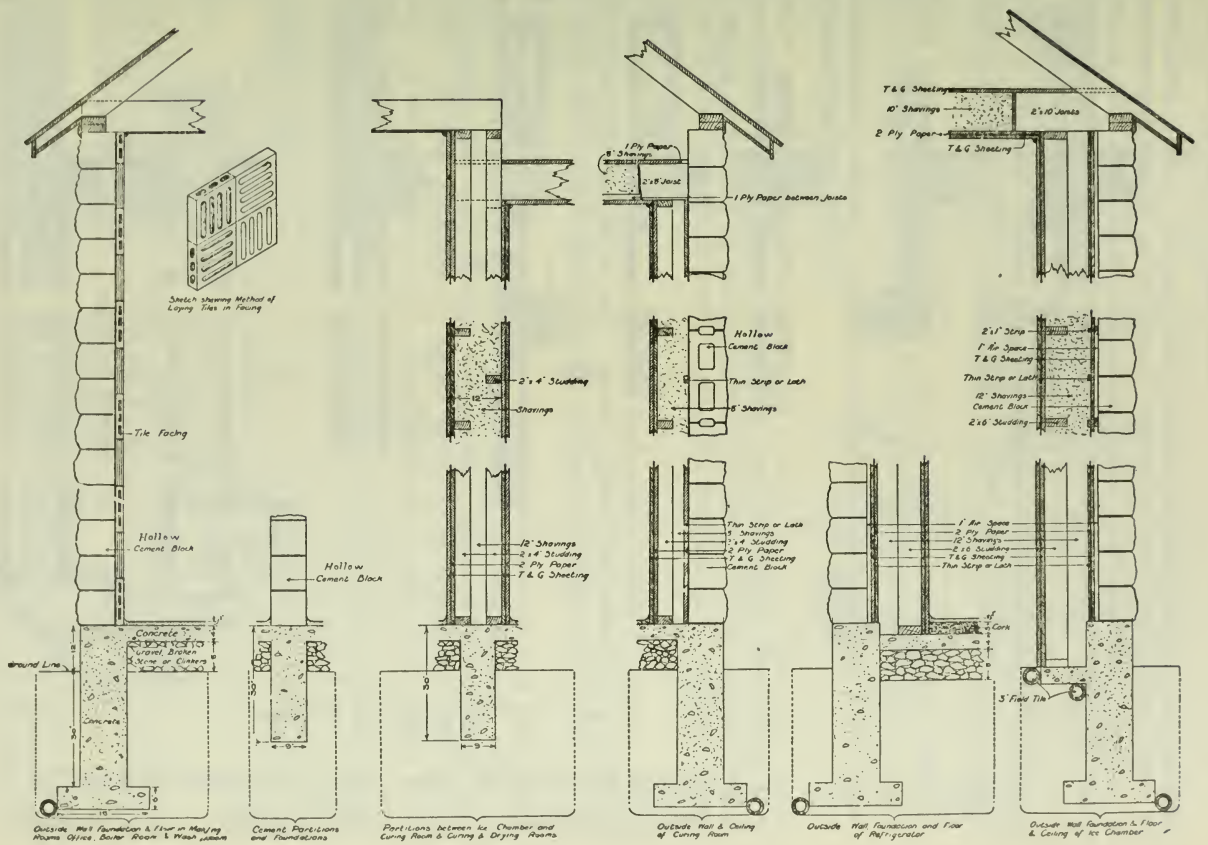
GROUND FLOOR PLAN

DETAILS OF CONSTRUCTION FOR A BRICK OR HOLLOW CEMENT BLOCK BUILDING

DETAILS DE CONSTRUCTION POUR UNE BATISSE EN BRIQUES OU EN BLOCS DE CIMENT

PLAN N° 1 PLATE PLANCHE III

Scale of Feet



DETAILS OF CONSTRUCTION FOR A FRAME BUILDING

DETAILS DE CONSTRUCTION D'UNE BATISSE EN BOIS

PLAN Nº1 PLATE PLANCHE V

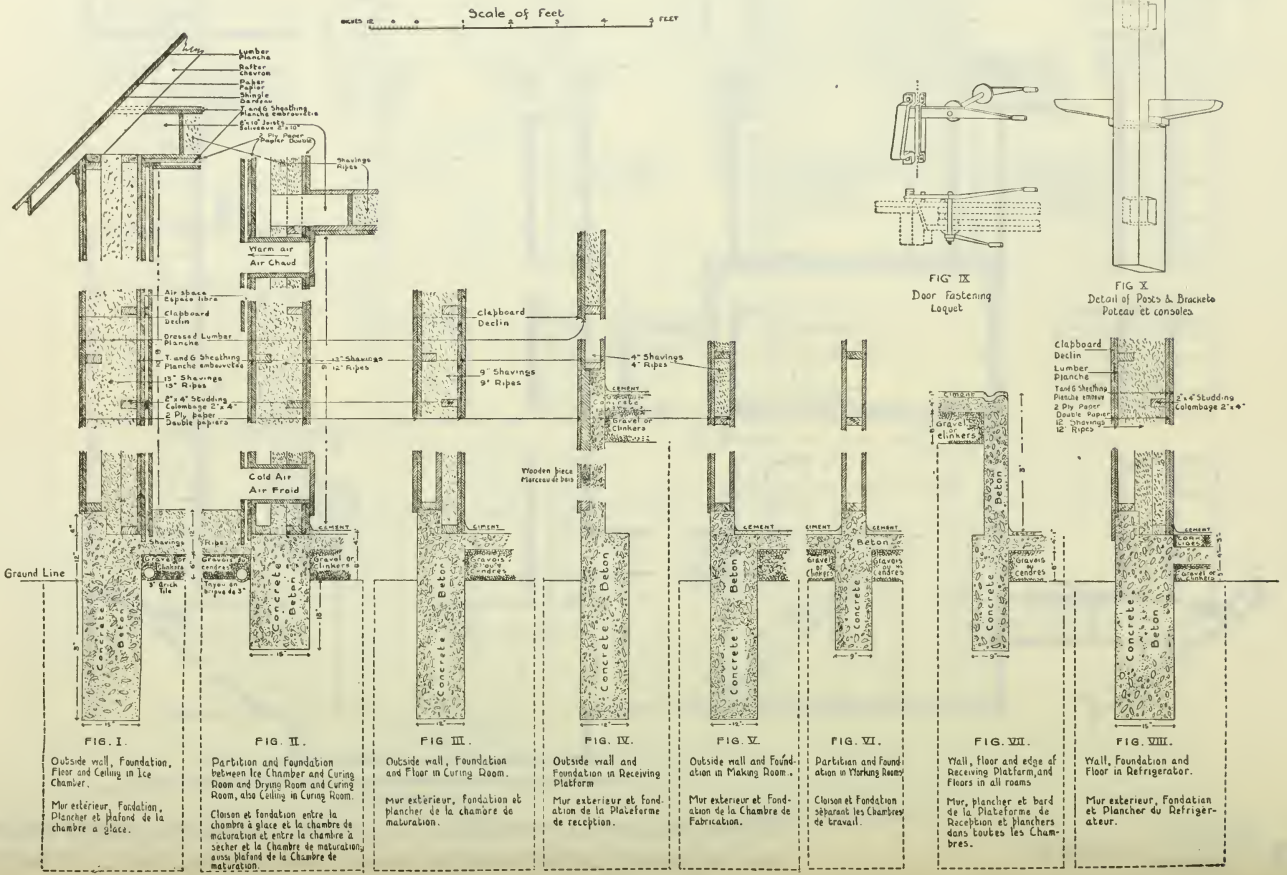


FIG. I.

Outside wall, Foundation, Floor and Ceiling in Ice Chamber.

Mur extérieur, Fondation, Plancher et plafond de la chambre a glace.

FIG. II.

Partition and Foundation between Ice Chamber and Curing Room and Drying Room and Curing Room, also Ceiling in Curing Room.

Cloison et fondation entre la chambre à glace et la chambre de maturation et entre la chambre à secher et la Chambre de maturation, aussi plafond de la Chambre de maturation.

FIG III.

Outside wall, Foundation and Floor in Curing Room.

Mur extérieur, Fondation et plancher de la chambre de maturation.

FIG. IV.

Outside wall and Foundation in Receiving Platform

Mur exterieur et fondation de la Plateforme de reception.

FIG. V.

Outside wall and Foundation in Making Room.

Mur exterieur et Fondation de la Chambre de Fabrication.

FIG. VI.

Partition and Foundation in Working Room

Cloison et Fondation séparant les Chambres de travail.

FIG. VII.

Wall, Floor and edge of Receiving Platform and Floors in all rooms

Mur, plancher et bord de la Plateforme de Reception et planchers dans toutes les Chambres.

FIG. VIII.

Wall, Foundation and Floor in Refrigerator.

Mur exterieur, Fondation et Plancher du Refrigerateur.

FIG IX

Door Fastening

Loquet

FIG X

Detail of Posts & Brackets

Poteau et consoles

inches below the ground level and 2 feet above the ground level at main wall, sloping to 1 foot above the ground level at the end. From each side of the milk weighing platform erect retaining walls 10 feet long, same thickness, depth and height as outside retaining walls.

For Partitions.—Under all partitions shown on plan, except that between the ice chamber and curing room, erect foundation walls 9 inches thick, 18 inches below and 12 inches above the ground level. For partition between the ice chamber and curing room make the foundations 14 inches wide, 18 inches below and 12 inches above the ground level.

For Post to Support Ceiling of Ice Chamber.—In the centre of the ice chamber erect a pier 18 inches square, 2 feet below and even with the ground level.

For Posts to Support Whey Tank.—In the engine room erect 4 concrete piers 18 inches square, 3 feet below and 1 foot above the ground level.

For Smokestack.—Erect a concrete foundation 4 feet square, 4 feet below and 1 foot above the ground level.

For Boiler and Engine.—Erect concrete foundations for boiler and engine as shown on plan. Top of boiler foundation to be 6 inches above floor level and top of engine bed to be 12 inches above floor level. Place anchor bolts in engine bed as directed and finish outside smoothly with cement. Anchor bolts to be furnished by owner.

Septic Tank.—From the corner of the bath-room, build a concrete wall 8 inches thick, 7 feet 6 inches below and 6 inches above the ground level to extend 6 feet out from the corner, then straight across and join the corner of the refrigerator wall.

Across the middle of this tank between the refrigerator and bath-room, erect a concrete wall 6 inches wide and same height as outside wall. Then in the centre of each tank erect 6-inch walls same height so as to make four compartments. All the drainage to septic tank to be connected with No. 1 compartment. Make outlets from one compartment to the other, 1 inch lower than drainage from the factory gutters; between compartments Nos. 1 and 2, 2 and 3, and 3 and 4, make a 3-inch steam pipe connection with elbows on each end. The intake end of each outlet to extend down into the tank 2 feet, so that the water is drawn from about the middle of each compartment. Directly over these connections, close to the cover, make openings 3 inches in diameter for ventilation. Connect the fourth compartment to the main drain with a 3-inch pipe; on the end of this pipe in the tank, screw an elbow and a piece of pipe 2 feet long.

Floor in Tank.—Make a concrete floor in the septic tank, 4 inches of concrete and 1-inch finish, same as on factory floors; all the walls and partitions in the tank to be made smooth and free from holes.

Cover on Tank.—Make a cover over the tank, 4 inches concrete and 1 inch finish, same as floors. Cover to be reinforced with $\frac{3}{4}$-inch iron. In the cover of each compartment, make a manhole 18 by 8 inches with bevelled sides and fitted with a 2-inch plank cover. In the cover over No. 1 compartment, place a vent 4 inches in diameter and in No. 4 compartment place a vent 2 inches in diameter.

FLOORS

Provide and lay over the floor area, except in the ice chamber and refrigerator to a depth of 8 inches with gravel, broken stone or clinkers, well rammed or rolled and afterwards moistened to prevent absorption of water in the concrete

when laid; on this lay 4 inches of the concrete mixture and 1 inch of the finishing mixture, surface of floor to be trowelled perfectly level and left smooth and even. Curing room floor to be graded 2 inches from the outside walls to the gutter at the partition between curing room and cheesemaking room. All the other floors to be graded to the gutters 1 inch to 6 feet.

Ice Chamber Floor.—Excavate the area of the ice chamber to a depth of 16 inches below the top of foundation. On the inside of the three outside walls lay a concrete block 4 inches thick and 12 inches wide to support studding for insulation. Inside of this concrete block, grade the ground with a slope of 2 inches to the end wall; lay a 3-inch field tile along the end wall and seven rows of the same sized tile across the room and connected with a row along the end wall. All the tile must be sunk level with the ground and connected with a 4-inch glazed tile, leading through the foundation wall to the drainage system of the factory. Provide a trap in the glazed tile outside of building.

On top of the field tile lay 8 inches of coal cinders or coarse gravel. Lay over the gravel, rough lumber and cover with 10 inches of planer mill shavings and cover with 1-inch rough lumber. On top of lumber lay 2- by 4-inch scantling at 24-inch centres.

Refrigerator Floor.—Excavate area of refrigerator to a depth of 15 inches below the top of the foundation and lay gravel and concrete the same as in curing room floor. On top of concrete lay one course of 3-inch impregnated cork board. Finish on top of cork with 1 inch of Portland cement, same as other floors.

Milk Weighing Platform Floor.—Fill in space between outside and inside walls with earth or stones or gravel rammed solid and lay 4 inches of concrete and finish with 1 inch cement same as in other floors. Grade 1 inch to gutter as directed. This floor to be 2 feet 10 inches from main floor.

Driveway between Storeroom and Boiler Room.—Lay a concrete floor same as floors of building 20 feet wide from the right hand side of boiler room, grade the surface of the floor 3 inches to "Bell" trap.

Gutters.—In the boiler room make a basin under the wash sink 3 feet by 18 inches and 7 inches deep. From this basin make a gutter as shown on plan 5 inches wide to partition at curing room. Under this partition and extending into the curing room 2 feet, make a gutter 2 inches wide, 2 inches deep at the main gutter and 1 inch deep at the end. Main gutter to be 7 inches deep at the basin and 3 inches deep at the curing room partition.

In the creamery make a gutter at boiler room partition as shown on plan, 4 inches wide, 5 inches deep at the main drain and 4 inches deep at the end. At the end make a basin 12 by 10 inches, 4 inches deep. In the testing room make a gutter 2 inches wide and 2 inches deep to Bell trap at the corner of boiler brick work.

On the weighing stand platform, make a gutter 2 inches from the edge of the platform, 2 inches deep at one end and 3 inches deep at the other and connected with a $1\frac{1}{2}$-inch pipe to outside of platform.

Traps and Soil Pipe.—In the basin in the boiler room, place two Bell trap cess-pools half an inch below bottom of basin. Connect No. 1 with the septic tank. Connect No. 2 with main drain running from the septic tank to catch basin.

In the bath-room place a Bell trap 2 inches below the floor level and a water-closet with the usual low down flushing tank, and connect both with the pipe running from No. 1 trap in basin to septic tank.

In boiler room at the corner of the boiler brick work, place a Bell trap 3 inches below the floor level and connect with main drain from septic tank to catch basin. In the floor in the driveway between the store-room and boiler room, place a Bell trap cess-pool where shown on plan and connect to the pipe running from No. 1 trap to septic tank.

All connections between traps and the septic tank or drains to be made with 4-inch cast-iron soil pipe with the joints stopped or cemented to prevent leaks.

SMOKESTACK

Outside the boiler room as shown on plan, erect a smokestack 40 feet high from foundation with a flue diameter of 18 inches; the smokestack to be constructed of cement blocks. The wall of the building to be used for one side of the smokestack, which must be built in with the wall. Make an opening for boiler smoke pipe where directed and place an iron frame and door provided by the owner in the outside of smokestack 4 feet from base. Top of smokestack to be finished with a solid concrete block, 4 inches thick and to extend 2 inches from the outside of the cement blocks.

CHIMNEYS

Erect two concrete block chimneys, one at each end of the main building. Chimneys to be built in the wall with 7-inch openings for stove pipe in curing room and creamery room; chimneys to extend even with the ridge of roof. Make water-tight joints around chimneys with shingles properly flashed at junction with chimney.

WALLS

To be constructed of hollow rock faced cement blocks, 2 feet long 8 inches wide and 9 inches high, carefully laid in cement mortar. Walls to be 14 blocks high to the plate. On foundation for roof over front driveway, lay 4 rows of cement blocks and finish on top with a 4-inch concrete block 12 inches wide.

Pointing.—The outside of the walls and the inside of all walls except curing room, ice chamber and refrigerator, to be neatly pointed.

WALLS FOR A BRICK BUILDING

Walls to be constructed of first-class white or coloured brick, 9 inches thick and 10 feet 6 inches high to the plate. On foundation over front driveway erect a brick wall 3 feet 6 inches high and 9 inches thick.

Plates.—On top of the wall, lay in mortar two courses of 2- by 6-inch plank with joints broken.

Extra Plate to Support Roof between Store-room and Boiler Room.—Lay across the driveway and fasten securely in the wall of the main building and level with the last course of cement blocks, extra plates 9 inches deep by 8 inches wide. These may be made by nailing sound 2- by 9-inch plank together. The regular plates to extend over these extra plates.

Window Sills and Lintels.—All doors in the cement walls to have a 9-inch cement lintel to extend 6 inches on each side of opening and a sill of same size to project 2 inches from wall line.

Door Steps and Lintels.—All doors in the cement walls to have 9-inch lintel to extend 6 inches on each side of opening.

At the outside doors in the office, creamery and cheesemaking room, make a concrete step, width of doors, 8 inches thick and 1 foot 6 inches wide, top to be trowelled smooth and even.

Partitions

Cement Block Partitions.—The partitions between the creamery and the cheesemaking room, the partition between the cheesemaking room and the curing room, the partition between the creamery and the cheesemaking room on one side and the office, boiler room and bathroom on the other, the partition between the office on the one side and the boiler room on the other, the partitions between the refrigerator and cheese room and refrigerator and ice chamber, and the partition or wall across weighing stand, to be constructed of smooth faced hollow cement blocks same size as in walls and neatly pointed on both sides, except in refrigerator and curing room.

Wood Partitions.—The partition between the ice chamber and the curing room to be constructed as follows: Erect 2- by 4-inch staggered studding at 24-inch centres, leaving a space of 12 inches between the outside face of each row of studs. Space to be filled with dry planing mill shavings. (See detail.) On the side next the ice chamber, lay one course of $\frac{7}{8}$-inch T. and G. sheathing, 2 ply of damp-proof paper and one course of $\frac{7}{8}$-inch T. and G. spruce sheathing free from shakes, large or loose knots. On top of this lay 1-inch furring strips at 24-inch centres, one ply of damp-proof paper, and finish with one course of $\frac{7}{8}$-inch T. and G. sheathing. On the side next the curing room lay $\frac{7}{8}$-inch T. and G. spruce sheathing, 2 ply of odourless building paper, and finished with "V" jointed T. and G. spruce sheathing erected perpendicularly. (See openings for air circulation.)

Partition in Attic.—Erect a partition in the attic directly over the partition between the creamery and cheesemaking room. Partition to consist of 2- by 4-inch studs and one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a batten door 7 feet by 3 feet in centre of partition.

Opening for Air Circulation in Partitions

Make two openings 12 inches wide by 8 inches high in the partition between curing room and ice chamber, 4 inches from the floor of the curing room and 7 feet from the outside walls. Near the ceiling make two similar openings. These openings to be fitted with sliding covers in the curing room.

Make an opening 12 by 8 inches in the wall between ice chamber and refrigerator 4 inches from the floor of the refrigerator and another opening the same size close to the ceiling. Both openings to be fitted with sliding covers.

Insulation

Outside Walls of Ice Chamber.—Erect against cement block surface 2- by 1-inch furring strips at 2-foot centres and cover with one course of $\frac{7}{8}$-inch T. and G. sheathing. Over this lay two ply of damp-proof paper to be held in place with thin strips or lath. Erect 2- by 4-inch studs at 2-foot centres placed to bring the outside edge 1 foot from surface of sheathing already erected, leaving a space of 12 inches to be filled with shavings. Cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of damp-proof paper and one course of $\frac{7}{8}$-inch T. and G. spruce sheathing free from shakes, large or loose knots. On top of this lay 1-inch furring strips at 24-inch centres, one ply of damp-proof paper and finish with one course spruce sheathing. Space between studs to be filled with dry planer shavings.

Walls of Refrigerator.—Erect against cement block surface 2- by 1-inch furring strips at 2-foot centres and cover with one course of $\frac{7}{8}$-inch T. and G. sheathing. Over this lay two ply of damp-proof paper to be held in place with thin strips or lath. Erect 2- by 4-inch studs at 2-foot centres placed to bring the outside edge one foot from surface of sheathing already erected leaving a space of 12 inches to be filled with shavings. Cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of damp-proof paper and finish with "V" jointed T. and G. spruce sheathing. (Note opening for air circulation between ice chamber and refrigerator.)

Walls of Curing Room.—Lay over inside surface of cement blocks, two ply of damp-proof paper held in place by thing strips or lath. Set up 2- by 4-inch studs, 24-inch centres, with outside edge 8 inches from inside surface of wall, so as to leave a space of 8 inches between wall and sheathing. Lay one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of odourless building paper and finish with $\frac{7}{8}$-inch T. and G. "V" jointed spruce sheathing, free from shakes, large or loose insert knots, put on perpendicularly. Space between wall and sheathing to be filled with dry planer shavings.

Partitions.—Inside of partition between curing room and cheese room to be insulated the same as walls of curing room. The space between the inside and outside sheathing of the partition between the curing room and ice chamber to be filled with dry planer shavings.

Ceilings of Ice Chamber, Refrigerator and Curing Room

Ceiling of Ice Chamber.—Lay 2- by 10-inch joists on top of walls at 24-inch centres. On the under side, cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of damp-proof paper and finish with $\frac{7}{8}$-inch T. and G. spruce sheathing. The space between the joists to be filled with dry planer shavings. Lay one course of $\frac{7}{8}$-inch T. and G. sheathing on top of joists. Make a hatch 4 feet by 3 feet in ceiling of ice chamber opposite door in gable and fit same with double doors. Ceiling to be supported by a 2-inch gas pipe in centre of ice chamber with a 4 by 4 run beam 6 feet long under ceiling.

Ceiling of Refrigerator.—Lay 2- by 6-inch joists on top of wall at 24-inch centres. On under side cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of building paper and finish with $\frac{7}{8}$-inch "V" jointed T. and G. spruce sheathing, the space between the joists to be filled with planer mill shavings to a depth of 14 inches.

Ceiling of Curing Room.—Place 2- by 8-inch joists at 24-inch centres with lower edge 9 feet in the clear above floor. Provide and erect the necessary beams to carry the joists. Cover under side of joists with one course of $\frac{7}{8}$-inch T. and G. spruce sheathing. On the upper side of this sheathing, lay one ply odourless building paper between joists and attached thereto with strips of wood. Spaces between joists to be filled with shavings. Cover joists on upper side with one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a hatch 3 feet square in ceiling of curing room close to ice chamber partition and fit same with double doors.

Ceilings of Cheesemaking Room, Creamery, Office and Boiler Room

Lay over the walls and partitions 2 by 8-inch joists at 24-inch centres. Provide and erect the necessary trusses to carry the ceilings. On the under side of the joists lay one course of $\frac{7}{8}$-inch "V" jointed T. and G. sheathing and finish corners with a moulding. On the upper side of this sheathing over the boiler room, office and creamery room lay between the joists one ply of build-

ing paper attached to joists with strips of wood. Fill space between joists with 4 inches of dry planer shavings. Cover the upper side of the joist over creamery, boiler and testing rooms with $\frac{7}{8}$-inch T. and G. sheathing and over cheesemaking room lay one inch rough lumber. In the centre of each ceiling except in office make a hatch with batten doors 18 inches square, hinged to open into attic, provide pulleys and ropes to open doors from the floor.

CEILING OF BATH ROOM

Lay 2- by 4-inch joists from plate to main wall. On the under side lay $\frac{7}{8}$-inch "V" jointed T. and G. sheathing.

CEILING OVER DRIVEWAY AND RECEIVING PLATFORM

Lay over the wall and plates 2- by 6-inch joists 24-inch centres. On the under side lay $\frac{7}{8}$-inch "V" jointed T. and G. sheathing. On the upper side of joists lay 1-inch rough lumber.

Make a hatch in middle of driveway ceiling 3 feet square and fit with a batten door.

CEILING OVER STORE-ROOM AND DRIVEWAY

Lay 2- by 8-inch joists on top of plates at 24-inch centres. Cover joists on upper side with one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a hatch 2 by 5 feet in the ceiling of the store-room where directed and fit same with door and hinges. Make a hatch over the driveway 6 feet square and fit with a double door and hinges. Make a ladder in the store-room from the floor to the hatch, ladder to be made 2- by 4-inch dressed studding fastened securely to the wall and dressed cross pieces $2\frac{1}{2}$ inches wide.

WIDTH OF SHEATHING

The inside sheathing on the walls of the curing room, refrigerator and all the ceilings, except the ice-chamber, to be not more than 4 inches wide and have a "V" joint, or 5 inches wide with "V" joint and a "V" in the centre of each board.

STAIRS

Erect a stairway from the boiler room to the attic 2 feet 6 inches wide with a turn as shown on plan. Make a partition at the turn on the stairs with a batten door 7 feet by 2 feet 6 inches.

POSTS AND SHELVING IN CURING ROOM

Erect in the curing room as shown on plan, twenty 6- by 6-inch posts dressed. The top of the posts to be mortised into 2- by 6-inch run beams fastened to the ceiling. The bottom of the posts to sit tightly on the floor. Centre of the first row of posts to be set 4 feet 3 inches from the partition between the curing room and cheesemaking room and the other rows at 5-feet-6-inch centres. The centre post in each row to be placed so that the cross pieces in it will support the ends of two boards. The posts next the passageway to be set in 6 inches from the end of the shelves.

Through each post make 4 holes 2 by 5 inches to receive the cross pieces to carry the shelves. Cross pieces to be 2 by 4 inches, 36 inches long, tapered to the ends as shown in cut and held in place with 2 hardwood wedges.

The top of the lowest cross piece to be 12 inches from the floor and the top of the others 22 inches apart.

Provide and fit on to the cross pieces white wood shelves 15 inches wide, 20 feet long and $1\frac{1}{2}$ inches thick dressed on all sides. Each shelf to have 2 boards 10 feet long.

SUPPORTS FOR WHEY TANK ABOVE BOILER ROOM

Under the joist of the boiler room place 2 beams 9 inches square 14 feet 6 inches long. These beams to be supported by 4 3-inch steam pipes with suitable flanges on each end. Set on 4 concrete piers. First beam to be 2 feet 6 inches clear of partition between boiler and testing room and second 5 feet 9 inches. On top of boiler brick work build one brick pier to support the end of first beam and place a 3-inch steam pipe with flanges on ends under the second beam in front of boiler.

WINDOWS

All window frames to be $1\frac{1}{4}$-inch dressed lumber with a square batten in centre of sides, around which the cement blocks must fit, and a quarter-round moulding to be fitted on the outside of frames. All windows except those in curing room to be fitted with a 5-inch casing on the inside.

In Curing Room.—Make 6 windows in curing room with opening 2 feet 6 inches by 2 feet. Each window to be fitted with double sash. Both sash in two of the windows to be hinged at the top and fitted with hooks and buttons.

In Cheesemaking Room.—4 windows 5 feet 6 inches, by 3 feet, 2 windows on weighing stand, opening 4 feet by 3 feet 6 inches, single sash, to be fitted to hang on pulleys and slide up through the ceiling.

In Creamery.—4 windows 5 feet 6 inches by 3 feet.

In Office.—2 windows 5 feet 6 inches by 3 feet.

In Boiler Room.—2 windows 5 feet 6 inches by 3 feet.

In Store-room.—3 windows 5 feet 6 inches by 3 feet.

In Bath-room.—1 window 2 feet 6 inches by 2 feet.

In Gable over Boiler Room.—1 window 2 feet 6 inches by 2 feet.

In Gable over Store-room.—1 window 5 feet 6 inches by 3 feet.

In Gable over Front Driveway.—1 window 5 feet by 2 feet 6 inches, to be fitted with a movable louvre sash, also a glazed sash to replace louvre sash during winter.

In Roof over Office.—Make a dormer window 3 feet wide and 2 feet 6 inches high fitted with sash in two parts made to slide. Sides and roof of window to be covered with lumber dressed on one side, one ply of damp-proof paper and steel shingles same as on roof.

DOOR FRAMES

All outside door frames to be $1\frac{1}{2}$-inch pine made with a one-inch square batten nailed on centre around which the cement blocks must fit, and a quarter-round moulding to be fitted on the outside of frames with a 5-inch casing on the inside. Outside door frames to have a 2-inch hardwood sill.

OUTSIDE DOORS

In Boiler Room.—1 double batten door 7 feet by 5 feet.

In Office.—1 panel door, 7 feet by 3 feet.

In Creamery.—1 double batten door 7 feet by 5 feet 6 inches.

In Store-room.—1 double batten door 7 feet by 6 feet.

In Cheesemaking Room.—1 panel door 7 feet by 3 feet.

In Curing Room.—3 feet from the floor of curing room, make an opening for loading cheeses 2 feet by 2 feet fitted with double doors. Both doors to be held in place with suitable bolts or fasteners.

In Gable over Ice Chamber.—1 panel door 7 feet by 3 feet, upper half glazed, under half fitted with a louvre sash and a solid panel to replace louvre sash during winter.

INSIDE DOORS

Five panel doors 7 feet by 3 feet. 1 panel door between boiler room and bath-room 7 feet by 2 feet 6 inches.

One batten sliding door, with rollers and track, between creamery and cheesemaking room, 5 feet 6 inches wide.

Insulated Doors and Frames—

One insulated door into refrigerator 7 feet by 3 feet.

One insulated door in partition between ice chamber and curing room near outside wall 5 feet by 3 feet. These doors and frames to be constructed as follows: Frames to be 2-inch dressed pine or spruce and bevelled to receive doors as shown on plan. Each door to have a bevelled and rebate frame, two thicknesses of boarding, with two thicknesses of damp-proof paper between, 2- by 1-inch strips and two thicknesses boarding with two thicknesses of damp-proof paper between, the edge of the doors to have $\frac{1}{2}$-inch plate covered with felt, this plate screwed to edge of door. Hinge these doors with 12-inch strap hinges and fit with wrought iron refrigerator door fasteners.

ROOF

Roof to be frame and put together in the best manner with rafters 2 by 6 inches and necessary tie pieces.

Cover rafters with $\frac{7}{8}$-inch lumber dressed on one side. Lay one ply of building paper and finish roof with medium grade galvanized steel shingles.

Finish ridge of roof with galvanized Roll Top Ridge Cap (including wood core). Finish valleys with galvanized valleys, 15-inch girth.

Roof over Weighing Stand and Front Driveway.—Erect 4 posts 6 by 6 inches on cement cap, as shown on plan, posts to be cased with dressed lumber. Frame 6- by 6-inch plates level with plate of main building. Rafters to be 2 by 6 inches covered with $\frac{7}{8}$-inch sheathing dressed on one side and finished with building paper and steel shingles, "Roll Top Ridge Cap" and valleys, same quality as main roof. Erect studs in gable and cover same with $\frac{7}{8}$-inch sheathing dressed on one side and steel shingles. Finish cornice and gables of all roofs as shown on plan with $\frac{7}{8}$-inch tongued and grooved sheathing.

Ventilators.—Erect where directed three 18-inch galvanized ventilators with dampers and flanged bottoms, all joints to be made water-tight. Make water-tight joints around chimney with shingles properly flashed at junction with chimney.

PAINTER AND GLAZIER

Properly prepare the whole of the work requiring painting, sand, knot, stop and prime, and then paint the whole of the woodwork on outside of building two coats (exclusive of priming) of best white lead and the best boiled linseed oil.

All external woodwork to be painted in two shades, body of building and doors to be painted white with trimmings dark green.

Inside doors, door frames, window frames, sash and 3 feet of the walls next floor in all the rooms, except curing room, refrigerator and ice chamber, to be painted two coats (exclusive of priming) of best white lead and the best linseed

oil and colour mixed together. Window sash to be white and rest of woodwork and walls to be light gray colour; balance of these walls and walls of curing room and refrigerator and all the ceilings to receive two coats of white alabastine.

The whole of the sashes to be glazed with 16-ounce best quality sheet glass; glass to be well bedded in, bradded and back puttied and all glass to be left clean and perfect at the end of the work.

PLAN No. 1

SPECIFICATIONS FOR A BUILDING CONSTRUCTED OF WOOD WITH INSULATED WALLS THROUGHOUT

Plates Nos. 1, 2, 3 and 5

Excavations

Excavate for the foundations of all outside walls to a depth of 2 feet 6 inches below the ground level. (Ground level to be determined by the owner.) Excavate for foundation of all partitions to a depth of 18 inches below ground level. Excavate for boiler and engine foundations to a depth of 18 inches below ground level.

Excavate for the septic tank the space between the bath-room and refrigerator 15 feet wide from the main wall of building to a depth of 7 feet 6 inches below the ground level.

Excavate for foundation of roof over front driveway to a depth of 2 feet 6 inches below the ground level.

Excavate for the retaining walls on each side of the foundation for roof over driveway to a depth of 2 feet below the ground level.

Excavate for smokestack foundation 4 feet below the ground level.

Excavate for concrete pier to support ceiling of ice chamber 2 feet below ground level.

Excavate for 5 concrete piers in boiler room to support whey tank 18 inches square and 3 feet below ground level.

Foundations

Foundation Walls.—Erect a concrete wall 14 inches thick under outside walls of ice chamber and refrigerator with a depth of 2 feet 6 inches below and 1 foot above the ground level.

All other outside foundations to be 12 inches thick with a depth of 2 feet 6 inches below and 1 foot above the ground level.

Adjoining the septic tank the foundation wall shall be 7 feet 6 inches below and 1 foot above the ground level.

For Roof over Front Driveway.—Erect a foundation 28 feet long, 2 feet 6 inches below and 2 feet above the ground level, 15 inches wide at the base and 8 inches wide at the top. Slant on outside of wall. At each end of this foundation erect retaining walls 15 feet long, 12 inches thick at base and 8 inches wide at top, 18 inches below the ground level and 2 feet above the ground level at main wall sloping to 1 foot above the ground level at the end. From each side of the milk weighing platform erect retaining walls 10 feet long, same thickness, depth and height as outside retaining walls.

For Partitions.—Foundations for partitions between ice chamber and curing room, between ice chamber and refrigerator and between refrigerator and

cheese room to be 14 inches thick with a depth of 18 inches below and 12 inches above the ground level. All other foundations for partitions to be 9 inches thick with a depth of 18 inches below and 12 inches above the ground level.

On top of all foundation walls and partitions except adjoining the weighing stand and roof over driveway, erect a further 6 inches of concrete 6 inches wide, as shown on plan.

Adjoining the weighing stand, erect on top of the outside foundation a 6-inch concrete wall 3 feet 6 inches high. On the outside of this wall, set in the concrete at 24-inch centres 2- by 2-inch pieces of wood 3 feet long on which to nail the clapboards.

On the inside foundation at weighing stand, erect a 6-inch concrete wall 2 feet 10 inches above the level of the finished floor.

For Post to Support Ceiling of Ice Chamber.—In the centre of the ice chamber erect a pier 18 inches square, 2 feet below and even with the ground level.

For Posts to Support Whey Tank.—In the engine room erect 5 concrete piers 18 inches square, 3 feet below and 1 foot above the ground level.

For Smokestack.—Erect a concrete foundation 4 feet square, 4 feet below and 1 foot above the ground level.

For Boiler and Engine.—Erect concrete foundations for boiler and engine as shown on plan. Top of boiler foundation to be 6 inches above floor level and top of engine to be 12 inches above floor level. Place anchor bolts in engine bed as directed and finish outside smoothly with cement. Anchor bolts to be furnished by owner.

Septic Tank.—From the corner of the bath-room, build a concrete wall 8 inches thick, 7 feet 6 inches below and 6 inches above the ground level to extend 6 feet out from the corner, then straight across and join the corner of the refrigerator wall.

Across the middle of this tank between the refrigerator and bath-room, erect a concrete wall 6 inches wide and same height as outside wall. Then in the centre of each tank erect 6-inch walls same height so as to make four compartments. All the drainage to septic tank to be connected with No. 1 compartment. Make outlets from one compartment to the other 1 inch lower than drainage from the factory gutters; between compartments Nos. 1 and 2, 2 and 3, 3 and 4, make a 3-inch steam pipe connection with elbows on each end. The intake end of each outlet to extend down into the tank 2 feet, so that the water is drawn from above the middle of each compartment. Directly over these connections, close to the cover, make openings 3 inches in diameter for ventilation. Connect the fourth compartment to the main drain with a 3-inch pipe, on the end of the pipe in the tank, screw an elbow and a piece of pipe 2 feet long.

Floor in Tank.—Make a concrete floor in the septic tank, 4 inches of concrete and 1 inch finish, same as on factory floors; all the walls and partitions in the tank to be made smooth and free from holes.

Cover on Tank.—Make a cover over the tank, 4 inches concrete and 1 inch finish, same as floors. Cover to be reinforced with $\frac{3}{4}$-inch iron. In the cover in each compartment, make a manhole 18 by 8 inches with bevelled sides and fitted with a 2-inch plank cover. In the cover over No. 1 compartment, place a vent 4 inches in diameter and in No. 4 compartment, place a vent 2 inches in diameter.

Floors

Area of all floors except in ice chamber and refrigerator to be levelled to a depth of 12 inches below top of foundation. (Foundation does not include the 6- by 6-inch course of concrete.)

Provide and lay over the floor area except in the ice chamber and refrigerator to a depth of 8 inches with gravel, broken stone or clinkers, well rammed or rolled and afterwards moistened to prevent absorption of water in the concrete when laid; on this lay 4 inches of the concrete mixture and 1 inch of the finishing mixture, surface of floor to be trowelled perfectly level and left smooth and even. Curing room floor to be graded 2 inches from the outside walls to the gutter at the partition between curing room and cheese-making room. All other floors to be graded to the gutter 1 inch to 6 feet.

Ice Chamber Floor.—Excavate the area of the ice chamber to a depth of 16 inches below the top of foundation. Grade the ground with a slope of 2 inches to the end wall; lay a 3-inch field tile along the end wall and seven rows of the same sized tile across the room and connected with the row along the end wall. All the tile must be sunk level with the ground and connected with a 4-inch glazed tile, leading through the foundation wall to the drainage system of the factory. Provide a trap in the glazed tile outside of building.

On top of the field tile lay 8 inches of coal cinders or coarse gravel. Lay over the gravel, rough lumber and cover with 10 inches of planer mill shavings and cover with one inch rough lumber. On top of lumber lay 2- by 4-inch scantling at 24-inch centres.

Refrigerator Floor.—Excavate area of refrigerator to a depth of 15 inches below the top of the foundation and lay gravel and concrete the same as in curing room floor. On top of the concrete, lay one course of 3-inch impregnated cork board. Finish on top of cork with 1 inch of Portland cement, same as other floors.

Milk Weighing Platform Floor.—Fill in space between outside and inside walls with earth or stones or gravel rammed solid and lay 4 inches of concrete and finish with 1 inch cement same as in other floors. Grade 1 inch to gutter, as directed. This floor to be 2 feet 10 inches from main floor.

Driveway between Storeroom and Boiler Room.—Lay a concrete floor same as floors of building 20 feet wide from the right hand side of boiler room, grade the surface of the floor 3 inches to " Bell " trap.

Gutters.—In the boiler room make a basin under the wash sink 3 feet by 18 inches and 7 inches deep. From this basin make a gutter as shown on plan 5 inches wide to partition at curing room. Under this partition and extending into the curing room 2 feet, make a gutter 2 inches wide, 2 inches deep at the main gutter and 1 inch deep at the end. Main gutter to be 7 inches deep at the basin and 3 inches deep at the curing room partition.

In the creamery make a gutter at boiler room partition as shown on plan, 4 inches wide, 5 inches deep at the main drain and 4 inches deep at the end. At the end make a basin 12 by 10 inches, 4 inches deep. In the testing room, make a gutter 2 inches wide and 2 inches deep to " Bell " trap at the corner of boiler brickwork.

On the weighing stand platform make a gutter 2 inches from the edge of the platform, 2 inches deep at one end and 3 inches deep at the other and connected with a $1\frac{1}{2}$-inch pipe to outside of platform.

Traps and Soil Pipe.—In the basin in the boiler room, place two Bell trap cess-pools half an inch below bottom of basin. Connect No. 1 with a septic tank. Connect No. 2 with main drain running from the septic tank to catch basin.

In the bath-room place a Bell trap 2 inches below the floor level and a water closet with the usual low down flushing tank, and connect both with the pipe running from No. 1 trap in basin to septic tank.

In boiler room at the corner of the boiler brickwork, place a Bell trap 3 inches below the floor level and connect with main drain from septic tank to catch basin. In the floor in the driveway between the store-room and boiler room, place a Bell trap cess-pool where shown on plan and connect to the pipe running from No. 1 trap to septic tank.

All connections between traps and the septic tank or drains to be made with 4-inch cast iron soil pipe with the joints stopped or cemented to prevent leaks.

SMOKESTACK

Outside the boiler room as shown on plan, erect a brick smokestack 40 feet high from foundation, with walls 12 inches thick and a flue 18 inches square. Make an opening for boiler smoke pipe where directed and place an iron frame and door provided by the owner in the outside of smokestack 4 feet from the base.

CHIMNEYS

Erect two brick chimneys one at each end of the main building. Chimneys to rest on brackets below the ceiling with a 7-inch opening for stove pipes in curing room and creamery room. Chimneys to extend even with ridge of roof.

WALLS

All walls to be 11 feet high from floor level to top of plate. Lay a sill of 2- by 4-inch scantling doubled at corners. Erect 2- by 4-inch scantlings at 24-inch centres with 4- by 4-inch corner posts. Lay a plate of two pieces of 2- by 4-scantling with broken joints.

Extra Plates over Driveway between the Boiler-room and Store-room.—Lay across the driveway and fasten securely in the frame of the main building and store-room extra plates 9 inches deep and 8 inches thick. These may be made by nailing sound 2- by 9-inch plank together.

Outside Sheathing.—Cover studding horizontally with one course of $\frac{7}{8}$-inch T. and G. spruce lumber dressed on one side. Cover this with one ply of damp-proof paper and finish on the outside with best quality clapboards laid not more than 3 inches to the weather. On that portion of the wall adjoining weighing stand, clapboards only to be laid. Corners of building to be finished with a casing 5 inches wide.

Inside Finish of Cheesemaking Room, Creamery, Engine Room, Bath-room and Office to be as follows: One ply of building paper and one course of $\frac{7}{8}$-inch T. and G. spruce "V" joint, put on horizontally.

Filling for Walls.—Space between studs in all outside walls to be filled with dry planing mill shavings.

Inside Finish of Ice Chamber.—Erect a second row of 2- by 4-inch studding (" staggered ") at 24-inch centres so placed as to bring the inside sheathing 12 inches from the outside sheathing, thus providing a space of 12 inches to be filled with shavings. On these lay two courses of $\frac{7}{8}$-inch T. and G. spruce sheathing, with two ply of damp-proof paper between. On top of this lay 1-inch furring strips, one ply of damp-proof paper and finish with one course of spruce sheathing, free from shakes, large or loose knots. Space between studs to be filled with dry planing mill shavings.

Inside Finish of Curing Room.—Erect a second row of 2- by 4-inch studs at 24-inch centres (" staggered ") with the inside face 8 inches from the outside face of first row, leaving a space of eight inches between the sheathing to be filled with shavings. On studs lay one course of $\frac{7}{8}$-inch T. and G. sheathing, one ply of damp-proof paper and finish with one course of "V" jointed spruce sheathing erected perpendicularly.

Inside Finish of Refrigerator.—To be the same as curing room, with a space of 12 inches in wall, to be filled with shavings.

Partitions between Ice Chamber, Curing Room and Refrigerator, and Refrigerator and Cheese Room.—Erect 2- by 4-inch staggered studding at 24-inch centres, leaving a space of 12 inches between the outside face of each row of studs. (See detail.) On the side next the ice chamber, lay one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of damp-proof paper and finish with one course of $\frac{7}{8}$-inch T. and G. spruce sheathing free from shakes, large or loose knots. On this sheathing lay 1-inch furring strips at 24-inch centres, one ply damp-proof paper and one course T. and G. spruce sheathing.

On the side next the curing room and on both sides at refrigerator lay $\frac{7}{8}$-inch T. and G. spruce sheathing, two ply odourless building paper and finish with "V" jointed T. and G. spruce sheathing, erected perpendicularly. (See Opening for Air Circulation.)

Partition between Curing Room and Cheese Room.—Erect 2- by 4-inch staggered studding at 24-inch centres, leaving a space of 8 inches between the outside face of each row of studding. On the curing room side, lay T. and G. spruce sheathing, two ply of building paper and finish with "V" jointed T. and G. sheathing put on perpendicularly. On the cheese room side, lay two ply of building paper and one course $\frac{7}{8}$-inch T. and G. "V" jointed spruce sheathing, put on horizontally.

Partition between Cheese Room and Creamery.—Erect 2- by 4-inch studding at 24-inch centres. On each side of studding lay one ply building paper and one course $\frac{7}{8}$-inch T. and G. " V " jointed spruce sheathing put on horizontally. Fill space between studs with planer mill shavings.

Partition between Creamery, Boiler Room and Office.—Erect 2- by 4-inch studding and cover each side with $\frac{7}{8}$-inch T. and G. " V " jointed spruce sheathing.

Partition in Attic.—Erect a partition in the attic directly over the partition between the creamery and cheesemaking room. Partition to consist of 2- by 4-inch studs and one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a batten door 7 feet by 3 feet in centre of partition.

OPENINGS FOR AIR CIRCULATION IN PARTITIONS

Make two openings 12 inches wide by 8 inches high in the partition between curing room and ice chamber, 4 inches from the floor of the curing room and 7 feet from the outside walls. Near the ceiling make two similar openings. These openings to be fitted with sliding covers in the curing room side.

Make an opening 12 by 8 inches in wall between ice chamber and refrigerator 4 inches from the floor of the refrigerator and another opening the same size close to the ceiling. Both openings to be fitted with sliding covers.

CEILINGS OF ICE CHAMBER, REFRIGERATOR AND CURING ROOM

Ceiling of Ice Chamber.—Lay 2- by 10-inch joists on top of walls at 24-inch centres. On the under side, cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of damp-proof paper and finish with $\frac{7}{8}$-inch T. and G. spruce sheathing.

The space between the joists to be filled with dry planer shavings. Lay one course of $\frac{7}{8}$-inch T. and G. sheathing on top of joists. Make a hatch 4 feet by 3 feet in ceiling of ice chamber opposite door in gable and fit same with double doors. Ceiling to be supported by a 2-inch gas pipe in centre of ice chamber with a 4 by 4 run beam 6 feet long under ceiling.

Ceiling of Refrigerator.—Lay 2- by 6-inch joists on top of wall at 24-inch centres. On under side cover with one course of $\frac{7}{8}$-inch T. and G. sheathing, two ply of building paper and finish with $\frac{7}{8}$-inch "V" jointed T. and G. spruce sheathing, the space between the joists to be filled with planer mill shavings to a depth of 14 inches.

Ceiling and Curing Room.—Place 2- by 8-inch joists at 24-inch centres with lowcer edge 9 feet in the clear above floor. Cover under side of joists with one course $\frac{7}{8}$-inch T. and G. spruce sheathing. On the upper side of this sheathing, lay one ply of odourless building paper between joists and attached thereto with strips of wood. Spaces between joists to be filled with shavings. Cover joists on upper side with one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a hatch 3 feet square in ceiling of curing room close to ice chamber partition and fit same with double doors.

CEILINGS OF CHEESEMAKING ROOM, CREAMERY, OFFICE AND BOILER ROOM

Lay over the walls and partitions 2- by 8-inch joists at 24-inch centres. Provide and erect the necessary trusses to carry the ceilings. On the under side of the joists lay one course of $\frac{7}{8}$-inch "V" jointed T. and G. sheathing and finish corners with a moulding. On the upper side of this sheathing over the boiler room, office and creamery room lay between the joists one ply of building paper attached to joists with strips of wood. Fill space between joists with 4 inches of dry planer shavings. Cover the upper side of the joist over creamery, boiler and testing rooms, with $\frac{7}{8}$-inch T. and G. sheathing and over cheese-making room lay 1-inch rough lumber. In the centre of each ceiling except in office make a hatch with batten door 18 inches square, hinged to open into attic, provide pulleys and ropes to open doors from the floor.

CEILING OF BATHROOM

Lay 2 by 4 joists from plate to main wall. On the under side lay $\frac{7}{8}$-inch "V" jointed T. and G. sheathing.

CEILING OVER DRIVEWAY AND RECEIVING PLATFORM

Lay over the wall and plates 2 by 6 joists 24-inch centres. On the under side lay $\frac{7}{8}$-inch "V" jointed T. and G. sheathing. On the upper side of joists lay 1-inch rough lumber.

Make a hatch in middle of driveway ceiling 3 feet square and fit with a batten door.

CEILING OVER STORE-ROOM AND DRIVEWAY

Lay 2- by 8-inch joists on top of plates at 24-inch centres. Cover joists on upper side with one course of $\frac{7}{8}$-inch T. and G. sheathing. Make a hatch 2 by 5 feet in the ceiling of the store-room where directed and fit same with door and hinges. Make a hatch over the driveway 6 feet square and fit with a double door and hinges. Make a ladder in the store-room from the floor to the hatch, ladder to be made of 2- by 4-inch dressed studdings fastened securely to the wall and dressed cross pieces $2\frac{1}{2}$ inches wide.

Width of Sheathing

The inside sheathing on the walls, partitions and ceilings except in the ice chamber, to be not more than 4 inches wide and have a "V" joint, or 5 inches wide with "V" joint and a "V" in the centre of each board.

Stairs

Erect a stairway from the boiler room to the attic 2 feet 6 inches wide with a turn as shown on plan. Make a partition at the turn on the stairs with a batten door 7 feet by 2 feet 6 inches.

Posts and Shelving in Curing Room

Erect in the curing room as shown on plan, twenty 6- by 6-inch posts dressed. The top of the posts to be morticed into 2- by 6-inch run beams fastened to the ceiling. The bottom of the posts to sit tightly on the floor. Centre of the first row of posts to be set 4 feet 3 inches from the partition between the curing room and cheesemaking room and the other rows at 5-feet 6-inch centres. The centre post in each row to be placed so that the cross pieces in it will support the ends of two boards. The posts next the passageway to be set in 6 inches from the end of the shelves.

Through each post make 4 holes 2 by 5 inches to receive the cross pieces to carry the shelves. Cross pieces to be 2 by 4 inches, 36 inches long, tapered to the ends as shown in cut and held in place with 2 hardwood wedges.

The top of the lowest cross piece to be 12 inches from the floor and the top of the others 22 inches apart.

Provide and fit on to the cross pieces white wood shelves 15 inches wide, 20 feet long and $1\frac{1}{2}$ inches thick dressed on all sides. Each shelf to have 2 boards 10 feet long.

Supports for Whey Tank Above Boiler Room

Under the joist of the boiler room place 2 beams 9 inches square 14 feet 6 inches long. These beams to be supported by four 3-inch steam pipes with suitable flanges on each end set on concrete piers as shown on plan. First beam to be 2 feet 6 inches clear of partition between boiler and testing room and second 5 feet 9 inches. End of beams over boiler brick work to be framed into and supported by wall.

Windows

All window frame to be $1\frac{1}{4}$-inch dressed lumber. All windows to be fitted with 5-inch casing.

In Curing Room.—Make 6 windows in curing room with opening 2 feet 6 inches by 2 feet. Each window to be fitted with double sash. Both sash in two of the windows to be hinged at the top and fitted with hooks and buttons.

In Cheesemaking Room.—4 windows 5 feet 6 inches by 3 feet, 2 windows on weighing stand, opening 4 feet by 3 feet 6 inches, single sash, to be fitted to hang on pulleys and slide up through the ceiling.

In Creamery.—4 windows 5 feet 6 inches by 3 feet.

In Office.—2 windows 5 feet 6 inches by 3 feet.

In Boiler Room.—2 windows 5 feet 6 inches by 3 feet.

In Store-room.—3 windows 5 feet 6 inches by 3 feet.

In Bath-room.—1 window 2 feet 6 inches by 3 feet.

In Gable over Boiler Room.—1 window 2 feet 6 inches by 2 feet.

In Gable over Store-room.—1 window 5 feet 6 inches by 3 feet.

In Gable over Front Driveway.—1 window 5 feet by 2 feet 6 inches, to be fitted with a moveable louvre sash, also a glazed sash to replace louvre sash during winter.

In Roof over Office.—Make a dormer window 3 feet wide and 2 feet 6 inches high fitted with sash in two parts made to slide. Sides and roof of window to be covered with lumber dressed on one side, one ply of damp-proof paper and steel shingles same as on roof.

Door Frames

All outside door frames to be $1\frac{1}{2}$-inch pine with a 5-inch casing. Outside door frames to have a 2-inch hardwood sill.

Outside Doors

In Boiler Room.—1 double panel door 7 feet by 5 feet.

In Office.—1 panel door, 7 feet by 3 feet.

In Creamery.—1 double batten door 7 feet by 5 feet 6 inches.

In Store-room.—1 double batten door 7 feet by 6 feet.

In Cheesemaking Room.—1 panel door 7 feet by 3 feet.

In Curing Room.—3 feet from the floor of curing room, make an opening for loading cheese 2 feet by 2 feet fitted with double doors. Both doors to be held in place with suitable bolts or fasteners.

In Gable over Ice Chamber.—1 panel door 7 feet by 3 feet, upper half glazed, under half fitted with a louvre sash and a solid panel to replace louvre sash during winter.

Inside Doors

Five panel doors 7 feet by 3 feet. One panel door between boiler room and bath-room 7 feet by 2 feet 6 inches.

One batten sliding door, with rollers and track, between creamery and cheesemaking room, 5 feet 6 inches wide.

Insulated Door and Frames.—

One insulated door into refrigerator 7 feet by 3 feet.

One insulated door in partition between ice chamber and curing room near outside wall 5 feet by 3 feet. These doors and frames to be constructed as follows: Frames to be 2-inch dressed pine or spruce and bevelled to receive doors as shown on plan. Each door to have a bevelled and rebate frame, two thicknesses of boarding with two thicknesses of damp-proof paper between 2- by 1-inch strips and two thicknesses boarding with two thicknesses of damp-proof paper between, the edge of the doors to have $\frac{1}{2}$-inch plate covered with felt, this plate screwed to edge of the door. Hinge these doors with 12-inch strap hinges and fit with wrought iron refrigerator door fasteners.

The outside course of lumber on doors to be "V" jointed same as an inside of making room wall.

Roof

Roof to be framed and put together in the best manner with rafters 2 by 6 inches and necessary tie pieces.

Cover rafters with $\frac{7}{8}$-inch lumber dressed on one side. Lay one ply of building paper and finish roof with medium grade galvanized steel shingles.

Finish ridge of roof with galvanized "Roll Top Ridge Cap" (including wood core). Finish valleys with galvanized valleys, 15-inch girth.

Roof over Weighing Stand and Front Driveway.—Erect 4 posts 6 by 6 inches on foundation, as shown on plan, posts to be cased with dressed lumber. Frame 6- by 6-inch plates level with plate of main building. Rafters to be 2 by 6 inches covered with $\frac{7}{8}$-inch sheathing dressed on one side and finished with building paper and steel shingles, "Roll Top Ridge Cap" and valleys, same quality as main roof. Erect studs in gable and cover same with $\frac{7}{8}$-inch sheathing dressed on one side and clapboards. Finish cornice and gables of all roofs as shown on plan with $\frac{7}{8}$-inch T. and G. sheathing.

Ventilators.—Erect where directed three 18-inch galvanized ventilators with dampers and flanged bottoms, all joints to be made water-tight. Make water-tight joints around chimneys with shingles properly flashed at junction with chimney.

PAINTER AND GLAZIER

Properly prepare the whole of the work requiring painting, sand, knot, stop and prime, and then paint the whole of the woodwork on outside of building two coats (exclusive of priming) of best white lead and the best boiled linseed oil.

All external woodwork to be painted in two shades; body of building and doors to be painted white with trimmings dark green.

Inside doors, door frames, window frames, sash and 3 feet of the walls next floor in all the rooms except curing room, refrigerator and ice chamber to be painted two coats (exclusive of priming) of best white lead and the best linseed oil and colour mixed together. Window sash to be white and rest of woodwork to be light grey colour. All other walls and ceilings, except in ice chamber to receive two coats of white alabastine.

The whole of the sashes to be glazed with 16-ounce best quality sheet glass; glass to be well bedded in, bradded and back puttied and all glass to be left clean and perfect at the end of the work.

PLAN No. 2

A CREAM GATHERING CREAMERY TO BE CONSTRUCTED OF WOOD WITH INSULATED WALLS THROUGHOUT

Plates Nos. 1, 2, 3 and 4

Capacity and Equipment

In this plan four 300-gallon cream vats or ripeners can be placed in the making room and two churns. The boiler should be 20 horse-power and the engine 10 horse-power. The ice chamber will hold 100 tons of ice.

CREAM GATHERING CREAMERY

Designed by the Dairy Division, Ottawa.

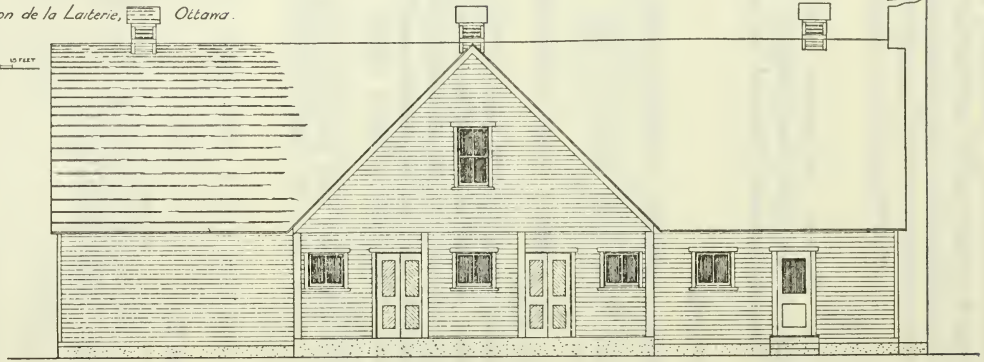
BEURRERIE À COLLECTE DE CRÈME

Plan de la Division de la Laiterie, Ottawa.

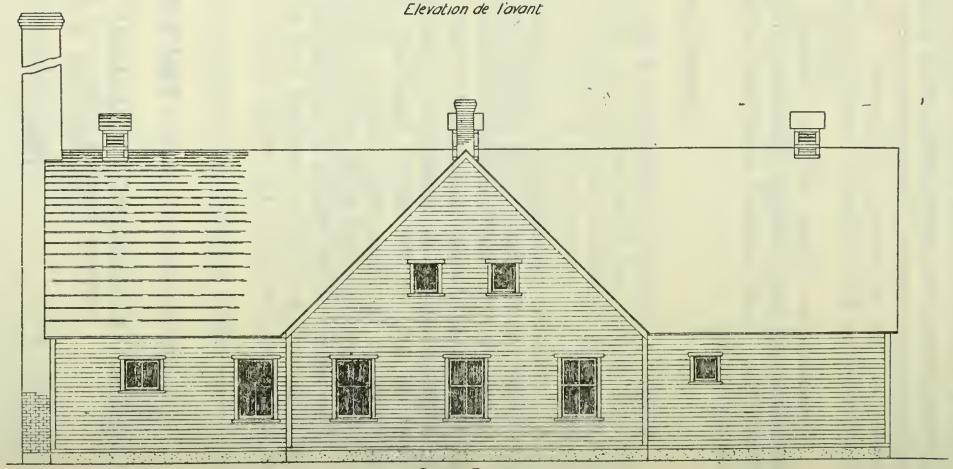
PLAN N° 2

PLATE
PLANCHE I

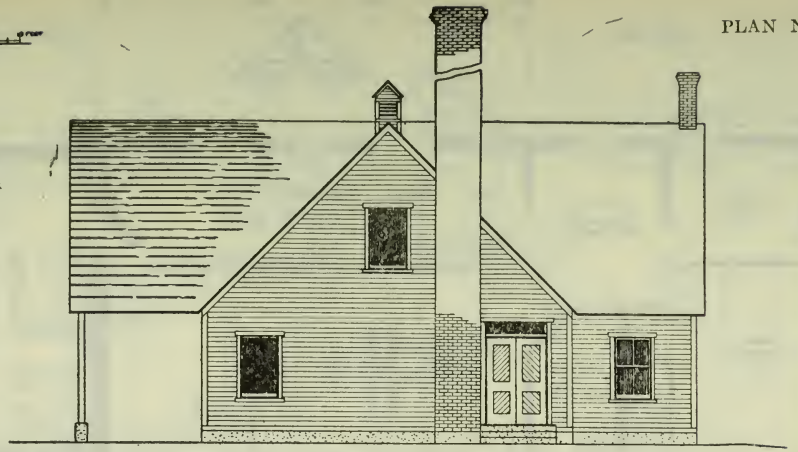
Scale of feet
0 5 10 15 FEET



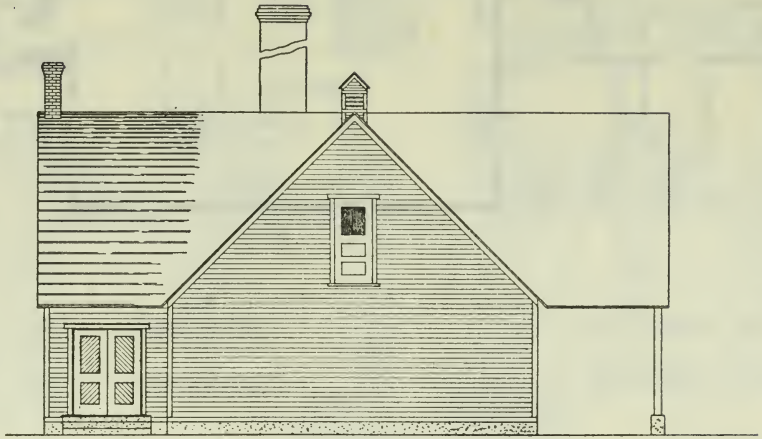
FRONT ELEVATION
Elevation de l'avant



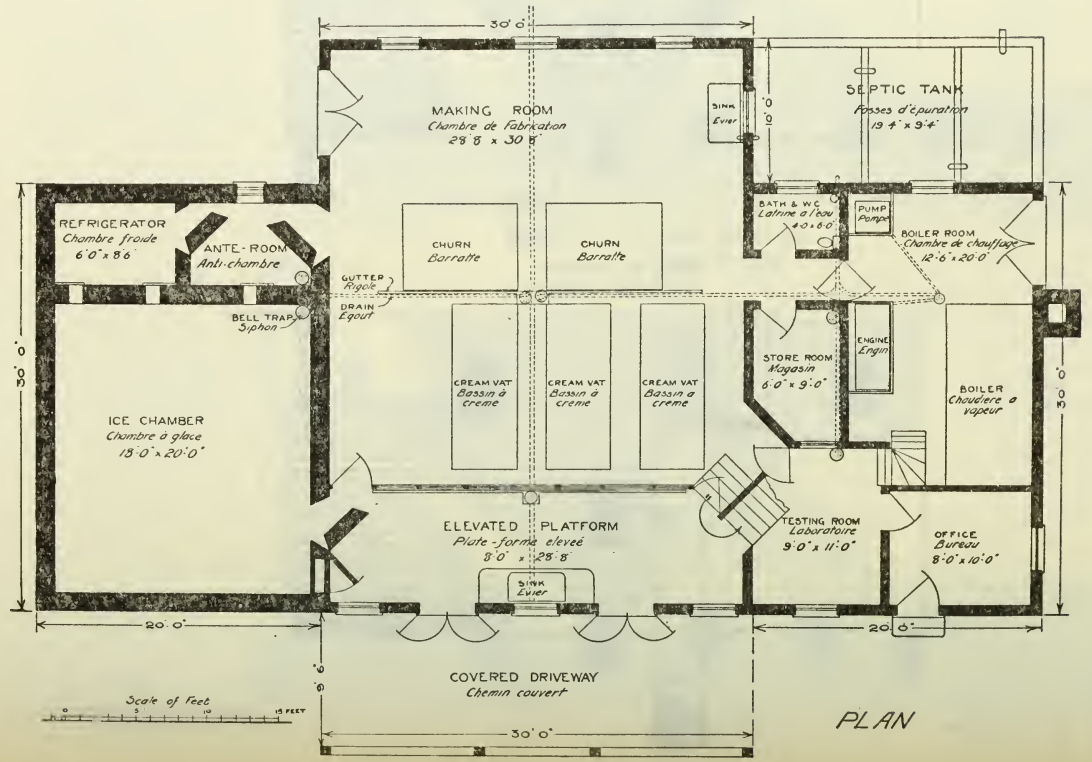
REAR ELEVATION
Elevation de l'arrière



RIGHT ELEVATION
Elevation de Droite



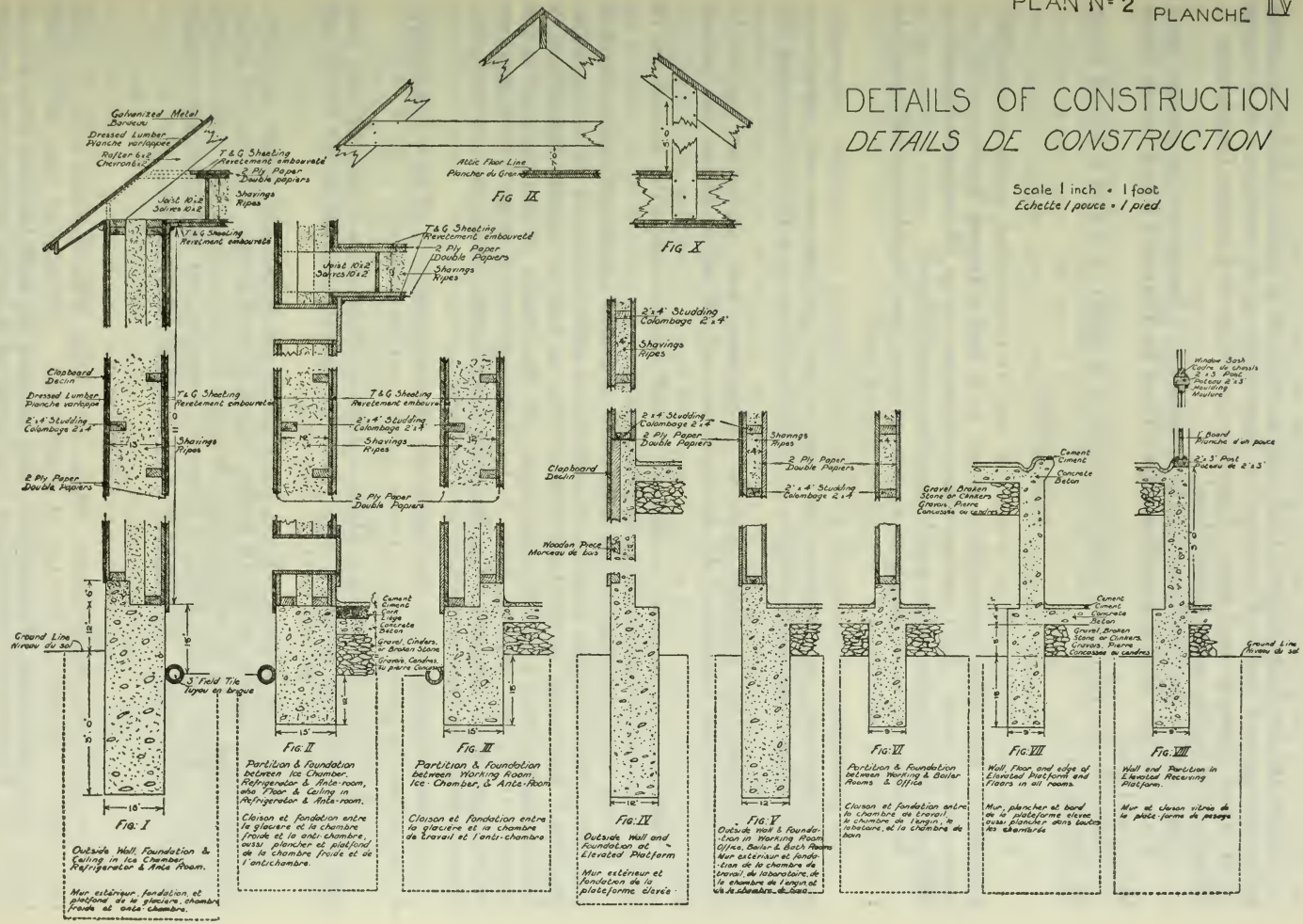
LEFT ELEVATION
Elevation de Gauche


30' 0"
MAKING ROOM
Chambre de fabrication
28'8" x 30'8"
SINK
Evier
SEPTIC TANK
Fosses d'épuration
19'4" x 9'4"
REFRIGERATOR
Chambre froide
6'0" x 8'6"
ANTE-ROOM
Anti-chambre
CHURN
Barratte
CHURN
Barratte
BATH & W.C.
Latrine à l'eau
4'0" x 6'0"
PUMP
Pompe
BOILER ROOM
Chambre de chauffage
12'6" x 20'0"
GUTTER
Rigole
DRAIN
Egout
BELL TRAP
Siphon
CREAM VAT
Bassin à crème
CREAM VAT
Bassin à crème
CREAM VAT
Bassin à crème
STORE ROOM
Magasin
6'0" x 9'0"
ENGINE
Engin
BOILER
Chaudière à vapeur
30' 0"
ICE CHAMBER
Chambre à glace
15'0" x 20'0"
ELEVATED PLATFORM
Plate-forme élevé
8'0" x 28'8"
TESTING ROOM
Laboratoire
9'0" x 11'0"
OFFICE
Bureau
8'0" x 10'0"
SINK
Evier
20' 0"
20' 0"
COVERED DRIVEWAY
Chemin couvert
Scale of feet
0 5 10 15 FEET
30' 0"

PLAN

DETAILS OF CONSTRUCTION
DETAILS DE CONSTRUCTION

Scale 1 inch = 1 foot
Echelle 1 pouce = 1 pied


Galvanized Metal Bardeau
Dressed Lumber Planche verlopée
Rafter 6x2 Chevron 6x2
T & G Sheeting Revêtement embouveté
2 Ply Paper Double papiers
Shavings Ripes
Joist 10x2 Solives 10x2
Attic Floor Line Plancher du Grenier
FIG IX
FIG X
2"x4" Studding Colombage 2"x4"
Clapboard Dessin
Dressed Lumber Planche verlopée
Sheathing Paper Papier goudronné
Cement Ciment
Concrete Béton
Gravel, Cinders, or Broken Stone Gravier, Cendres ou pierre Concassée
Ground Line Niveau du sol
3 Field Tile Tuyau en brique
Wooden Piece Morceau de bois
Window Sash Cadre de chassis
Moulding Moulure
1" Board Planche d'un pouce
2"x3" Post Poteau de 2"x3"
FIG I
Outside Wall, Foundation & Ceiling in Ice Chamber, Refrigerator & Ante Room.
Mur extérieur, fondation, et plafond de la glacière, chambre froide et ante-chambre.
FIG II
Partition & Foundation between Ice Chamber, Refrigerator & Ante-room, also Floor & Ceiling in Refrigerator & Ante-room.
Cloison et fondation entre la glacière et la chambre froide et la ante-chambre, aussi plancher et plafond de la chambre froide et de l'ante-chambre.
FIG III
Partition & Foundation between Working Room, Ice Chamber, & Ante-Room
Cloison et fondation entre la glacière et la chambre de travail et l'anti-chambre
FIG IV
Outside Wall and Foundation at Elevated Platform
Mur extérieur et fondation de la plateforme élevée
FIG V
Outside Wall & Foundation in Working Room, Office, Boiler & Bath Rooms
Mur extérieur et fondation de la chambre de travail, du laboratoire, de la chambre de l'argin et de la chambre de bain
FIG VI
Partition & Foundation between Working & Boiler Rooms & Office
Cloison et fondation entre la chambre de travail, la chambre de l'argin, la chaudière, et la chambre de bain
FIG VII
Wall, Floor and edge of Elevated Platform and Floors in all rooms.
Mur, plancher et bord de la plateforme élevée dans toutes les chambres
FIG VIII
Wall and Partition in Elevated Receiving Platform.
Mur et cloison vitrés de la plate-forme de passage

SPECIFICATIONS

EXCAVATIONS

Excavate for foundations of all outside walls to a depth of 2 feet 6 inches below the ground level. Excavate for foundation of all partitions to a depth of 18 inches below ground level. Excavate for boiler and engine foundations to a depth of 18 inches below ground level.

Excavate for the foundation of the smokestack 4 feet below the ground level.

Excavate for the septic tank a space 20 feet by 10 feet, 7 feet 6 inches below the ground level.

Excavate for roof over front driveway to a depth of 2 feet 6 inches below the ground level.

FOUNDATIONS

For Outside Walls.—Erect a concrete wall 14 inches thick under ice chamber refrigerator and ante-room, with a depth of 2 feet 6 inches below and 1 foot above ground level. All other outside foundations to be 12 inches thick with a depth of 2 feet 6 inches below and 1 foot above ground level.

Adjoining the septic tank as shown on plan, the foundation wall shall be 7 feet 6 inches below and 1 foot above ground level.

For Partitions.—Foundation for partition between ice chamber, ante-room and working room, and between ice chamber and refrigerator and ante-room to be 14 inches thick, with a depth of 18 inches below and 12 inches above the ground level.

Foundation for partition between refrigerator and ante-room to be 12 inches thick with a depth of 18 inches below and 12 inches above the ground level.

Foundation for all other partitions to be 9 inches thick with a depth of 18 inches below and 12 inches above the ground level.

On top of all foundations for walls and partitions, except adjoining elevated platform, erect a further 6 inches of concrete 6 inches wide, as shown in detail on plan. Adjoining elevated platform, erect on top of outside foundation, a 6-inch concrete wall 3 feet 6 inches high. On the outside of this wall, set in the concrete at 24-inch centres, flush, 2- by 2-inch pieces of wood 3 feet long, on which to nail the clapboards. On the inside foundation of platform, erect a 6-inch concrete wall 3 feet above level of finished floors.

For Smokestack.—The foundation for the smokestack shall be 4 feet square, 4 feet below the ground level and same height as foundations.

For Roof over Driveway.—Make a 12-inch foundation to support the roof over the driveway at weighing stand, this foundation to be 30 inches below and 18 inches above the ground level, 27 feet long.

For Boiler and Engine.—Erect foundations for boiler and engine as shown on plan. Foundations to be 18 inches below ground level. The top of boiler foundation bed to be 6 inches above floor level and engine bed 1 foot above floor level. Place anchor bolts as directed in engine bed and finish the outside smoothly with cement. Anchor bolts to be furnished by the owner.

FLOORS

Making Room, Boiler Room, Office, etc.—Area of these floors to be levelled to a depth of 12 inches below top of foundations. (Foundation does not include the 6- by 6-inch course of concrete.) Provide and lay over the floor area except in the ice chamber and refrigerator to a depth of 8 inches with gravel, broken stone or clinkers, well rammed or rolled and afterwards moistened to prevent absorption of water in the concrete when laid; on this lay 4 inches of the con-

crete mixture and 1 inch of the finishing mixture, surface of floor to be trowelled perfectly level and left smooth and even. All floors to be graded to gutters and Bell traps 1 inch to 6 feet.

Ice Chamber Floor.—Excavate the area of the ice chamber to a depth of 18 inches below the top of the foundation and lay a system of 3-inch field tile over floors as shown on plan and connect the same with the factory drainage. A trap must be placed in the drain outside of building. On top of the field tile lay 8 inches of coal cinders or coarse gravel. Lay over the gravel one inch rough lumber and cover with 12 inches of planer mill shavings. Cover shavings with 1-inch rough lumber and 2- by 4-inch scantling at 24-inch centres.

Refrigerator Floor.—Excavate area of refrigerator to a depth of 15 inches below the top of the foundation and lay gravel and concrete the same as in working room floor. On top of concrete, lay one course of 3-inch impregnated cork board. Finish the top with 1 inch of Portland cement, same as other floors.

Elevated and Receiving Platform Floor.—Fill the space between outside and inside walls with earth, gravel or stones, well rammed, and lay a floor the same as in working room. Grade floor with 1-inch slope from outside wall to gutter. Level of this floor to be 3 feet above floor of working room.

GUTTERS AND TRAPS

On the elevated platform make a gutter 2 inches wide and 2 inches deep at the ends and 3 inches deep at the Bell trap. In the making room floor where shown on plan make a basin 26 inches long, 14 inches wide and 4 inches deep. From each end of this basin make a gutter 11 feet long, 4 inches wide, 2 inches deep at the end and 4 inches deep at basin. Around the edge of the engine bed and pump make gutters $1\frac{1}{2}$ inches wide and 2 inches deep. Lay 4-inch cast-iron soil pipe from the septic tank to the testing room and connect same to Bell traps set 2 inches below the floor level in the bath-room, store-room, and testing room, also to a low down water-closet in the bath-room. From this pipe lay 4-inch soil pipe as shown on plan to the elevated platform and connect same to the Bell trap in the gutter and the sink on elevated platform, also to one of the Bell traps in the basin in making room floor. Connect the sink in the making room to the septic tank with $1\frac{1}{2}$-inch pipe with trap.

From a drain at the end of the making room to the basin in the gutter lay 4-inch soil pipe. Place a second Bell trap in the basin and connect same to this pipe. Continue the pipe to the ante-room and ice chamber and there connect with Bell traps as shown on plan.

Place a Bell trap at the corner of the boiler brick work 3 inches below the floor level and connect to the pipe from testing room to septic tank. Connect the gutters on engine bed and at pump to the basin at the Bell trap with 1-inch pipe.

Septic Tank.—From the corner of the boiler room to the corner of making room as shown on plan, erect a concrete wall 8 inches thick and 7 feet 6 inches high. Across this tank erect two walls 6 inches thick and 7 feet 6 inches high. Make outlets through these walls of 3-inch steam pipe with elbows on each end. The intake end of each outlet to extend down into the tank 2 feet. Directly over these connections, close to the cover, make openings 3 inches in diameter for ventilation. Connect the third compartment to the main drain with a 3-inch pipe; on the end of the pipe in the tank, screw an elbow and a piece of pipe 2 feet long.

Floor in Tank.—Make a concrete floor in the septic tank, 4 inches of concrete and 1 inch finish, same as on factory floors; all the walls and partitions in the tank to be made smooth and free from holes.

Cover on Tank.—Make a cover over the tank, 4 inches concrete and 1 inch finish, same as floors. Cover to be reinforced with $\frac{3}{4}$-inch iron. In the cover in each compartment, make a manhole 18 by 18 inches with bevelled sides and fitted with a 2-inch plank cover. In the cover over No. 1 compartment, place a vent 4 inches in diameter and in No. 4 compartment, place a vent 2 inches in diameter.

SMOKESTACK

Erect outside of boiler room as shown on plan, a brick smokestack with a 14-inch flue and walls 12 inches thick and 40 feet high from top of foundation. Three feet from the foundation, place an iron door and frame about 12 by 14 inches.

BRICK CHIMNEY

Erect a brick chimney 16 by 16 inches at the end of making room to extend below ceiling with a 7-inch opening for stove pipe. Chimney to extend 4 feet above the ridge of roof.

WALLS

All walls to be 11 feet high from floor level to top of plate. Lay a sill of 2- by 4-inch scantling doubled at corners. Erect 2- by 4-inch studding at 24-inch centres with 4- by 4-inch corner posts. Lay a plate of two pieces of 2- by 4-inch scantling with broken joints.

Outside Sheathing.—Cover studding with one course of $\frac{7}{8}$-inch spruce lumber dressed on one side. Cover this with one ply of building paper and one ply of damp-proof paper (damp-proof on the outside). All paper to be well lapped. Finish on the outside with best quality clapboards laid not more than 3 inches to the weather. On that portion of the wall adjoining elevated platform, clapboards only to be laid. Corners of buildings to be finished with a casing 5 inches wide.

Inside Sheathing of Making Room, etc.—On the inside of studding in the making room, bath-room, office, boiler room and testing room lay one ply of building paper over studs, then one ply of damp-proof paper and finish with $\frac{7}{8}$-inch T. and G. spruce "V" jointed sheathing, 3 inches wide or 5 inches wide with a "V" in the centre. On the first $3\frac{1}{2}$ feet of the wall from the foundation, the sheathing to be erected perpendicular with a narrow ledge or moulding along top. The rest of the sheathing to be erected horizontally.

Filling for Walls.—Space between studs in outside walls to be filled with dry planing mill shavings.

Inside Sheathing of Ice Chamber, Refrigerator and Ante-Room.—Erect a second row of 2- by 4-inch studding (staggered) at 24-inch centres so placed as to bring the inside sheathing 12 inches from the outside sheathing, thus providing a space of 12 inches to be filled with shavings. Lay one course $\frac{7}{8}$-inch T. and G. spruce sheathing, two ply of damp-proof paper and finish with one ply $\frac{7}{8}$-inch T. and G. spruce sheathing, free from shakes, large or loose knots. Space between studs to be filled with dry planing mill shavings well rammed. On the last course of sheathing in the ice chamber lay 1-inch furring strips at 24-inch centres, one ply damp-proof and one course $\frac{7}{8}$-inch T. and G. spruce sheathing. Last course of T. and G. sheathing in refrigerator and ante-room to be "V" jointed.

PARTITIONS

Ice Chamber, Refrigerator and Ante-room.—The partitions adjoining the ice chamber, ante-room and refrigerator to be constructed as follows:—

Erect 2- by 4-inch staggered studding at 24-inch centres, so as to provide a space of 12 inches between the inside and outside sheathing.

Cover the outside of each row of studding with one course of $\frac{7}{8}$-inch T. and G. spruce sheathing, two ply of damp-proof building paper and finish with one course of T. and G. spruce sheathing. On this sheathing in the ice chamber lay 1-inch furring strips at 24-inch centres, one ply damp-proof paper and one course T. and G. spruce sheathing. The finish next making room to be of "V" joint and erected in the same manner as for outside walls of making room. (First 3 feet 6 inches perpendicular, balance horizontal.)

Boiler Room, Office, Bath-Room, etc.—The partitions dividing making room, boiler room, office, bath-room, testing rooms, etc., to be constructed of 2- by 4-inch studs covered on both sides with "V" joint $\frac{7}{8}$-inch T. and G. spruce sheathing, laid in same manner as specified for inside of walls of making room, namely, 3 feet 6 inches perpendicular and balance horizontal. All "V" jointed sheathing to be 3 inches wide or 5 inches wide with a "V" in the centre.

Partition on Receiving Platform.—Erect from the edge of receiving platform to the ceiling as shown on plan, a partition to consist of a frame work of 2- by 3-inch dressed studding with one course of "V" joint T. and G. spruce sheathing, finished on both sides and set in centre of studding with quarter round moulding on all corners. Upper half of this partition to be glazed. Make opposite each cream door an opening in partition 1 foot high by 2 feet wide fitted with doors hinged to turn up.

OPENINGS FOR AIR CIRCULATION

Make two openings 12 inches wide by 8 inches high in the partition between refrigerator and ice chamber, and one same size in ante-room close to the floor. Make three similar openings near the ceiling. These openings to be fitted with sliding covers.

STAIRS

Erect a stairway from boiler room to attic 2 feet 6 inches with a turn as shown on plan. Make a batten door at corner of partition.

CEILINGS

Ice Chamber.—Lay 2- by 10-inch joists on top of walls at 24-inch centres. On the under side, cover with one course of $\frac{7}{8}$-inch T. and G. spruce sheathing, two ply of damp-proof paper and finish with $\frac{7}{8}$-inch T. and G. spruce sheathing. The space between the joists to be filled with dry planer shavings. Lay one course of $\frac{7}{8}$-inch T. and G. sheathing on top of joists. Make a hatch 4 feet by 3 feet in ceiling of ice chamber 4 feet from the door in gable end and fit same with double doors. Ceiling to be supported in centre with a 3-inch galvanized steam pipe set on a concrete pier with proper flanges on top and bottom.

Refrigerator and Ante-room.—Fix 2- by 10-inch joists at 30-inch centres so as to make a ceiling 7 feet clear from the floor. On the under side, cover with one course of $\frac{7}{8}$-inch T. and G. spruce sheathing, two ply of damp-proof paper and finished with $\frac{7}{8}$-inch T. and G. spruce sheathing. The space between the joists to be filled with dry planer shavings. Lay one course of $\frac{7}{8}$-inch T. and G. sheathing on top of joists.

Making Room, Office, Bath-Room, Boiler Room, Testing Room, over Driveway, etc.—Lay over walls and partition 2- by 8-inch joists at 24-inch centres. On the under side of joists lay one course of T. and G. spruce sheathing. Finish corners with moulding. On the upper side of this sheathing, lay between joists, one ply of building paper attached to joists with strips of wood. Fill space between joists with 4 inches of dry planer shavings.

Cover the upper side of joists with $\frac{7}{8}$-inch T. and G. sheathing.

In ceiling of making room, make a hatch where directed 4 feet square with door of "V" jointed sheathing on hinges to fit even with the floor above.

Make hatch 2 feet by 2 feet in ceiling of boiler room with door of "V" jointed sheathing on hinges to fit even with floor above, hatch with openings to be neatly finished with dressed lumber with a 4-inch casing on ceiling.

Run Beam and Post.—Provide and erect the necessary truss or run beam to support the ceiling of making room. If a run beam is used, there must be only one post to be of 3-inch galvanized iron steam pipe with suitable iron flanges at top and bottom.

WINDOWS

In Making Room.—Make 4 windows 5 feet 6 inches by 3 feet.

In Office.—Make 1 window 5 feet 6 inches by 3 feet.

At Elevated Platform.—Make 3 windows 3 feet by 3 feet.

In Bath-room.—Make 1 window 2 feet 6 inches by 2 feet 6 inches.

In Testing Room.—Make 1 window 5 feet 6 inches by 3 feet.

In Boiler Room.—Make 1 window 5 feet 6 inches by 3 feet.

In Ante-room.—Make 1 window 2 feet by 2 feet with double sash, each double glazed.

In Store-room.—Make 1 window 5 feet 6 inches by 3 feet.

In Attic.—In the gables over boiler room, making room and driveway make 1 window 5 feet 6 inches by 3 feet 6 inches.

OUTSIDE DOORS

In Boiler Room.—Make 1 double panelled door 7 feet by 5 feet with transom 12 inches high.

In Making Room.—Make 1 double panelled door 7 feet by 5 feet 6 inches and 2 double doors at receiving platform 7 feet by 4 feet.

In Office.—Make a panel door 7 feet by 3 feet.

In Gable over Ice Chamber.—Make 1 panel door 7 feet by 3 feet, upper half glazed.

INSIDE DOORS

Provide and hang panel doors as follows:—

One door 7 feet by 3 feet between working room and testing room.

One door 7 feet by 3 feet between testing room and office.

One door 7 feet by 3 feet between working room and boiler room.

One door 7 feet by 2 feet 6 inches into bath-room.

One door 7 feet by 3 feet into store-room.

Three doors 7 feet by 3 feet on elevated platform.

Make a batten door for the stairs.

Insulated Doors and Frames.—Make an insulated door between the refrigerator and ante-room with opening 6 feet 6 inches by 2 feet 6 inches. One between making room and ante-room with opening 6 feet 6 inches by 3 feet and one on elevated platform between making room and ice chamber with opening 6 feet by 3 feet. These doors and frames to be constructed as follows: Frames to be 2-inch dressed pine or spruce and bevelled to receive doors as shown on plan. Each door to have a bevelled and rebate frame, two thicknesses of boarding, with two thicknesses of damp-proof paper between 2- by 1-inch strips and two thicknesses boarding with two thicknesses of damp-proof paper between, the edge of the doors to have $\frac{1}{2}$-inch plate covered with felt, this plate screwed to edge of door. Hinge these doors with 12-inch strap hinges and fit with wrought iron refrigerator door fasteners.

The outside course of lumber on doors to be "V" jointed same as on inside of making room wall.

ROOF

Roof to be framed and put together in the best manner with rafters 2 by 6 inches and necessary tie pieces and supports.

Cover rafters with $\frac{7}{8}$-inch lumber dressed on one side. Lay one ply of damp proof paper and finish roof with medium grade galvanized steel shingles.

Finish ridge of roof with galvanized "Roll Top Ridge" cap (including wood core). Finish valleys with galvanized "Special" valley 15-inch girth.

Roof over Weighing Stand.—Erect 4 posts 6 by 6 inches on foundation as shown on plan. Frame 6- by 6-inch plates level with plate of main building and finish top of posts as shown on plan. Joists and roof to be the same as main building. Six- by six-inch posts to be neatly cased with dressed lumber.

Ventilators.—Erect where directed three 18-inch galvanized ventilators with dampers and flanged bottom, all joints to be made water-tight. Make water-tight joints around chimneys with shingles properly flashed at junction with chimney.

PAINTER AND GLAZIER

Properly prepare the whole of the work requiring painting, sand, knot, stop and prime, and then paint the whole of the woodwork on outside of building two coats (exclusive of priming) of best white lead and best boiled linseed oil and colour mixed together.

All external woodwork to be painted in two shades, body of building and doors to be painted white, with trimmings dark green.

Inside doors, door frames, window frames, sash and all wainscoting to be painted two coats (exclusive of priming). Window sash to be white and the rest of woodwork to be a light grey colour to approval. Walls and ceilings in ante-room and refrigerator and walls above wainscoting and ceilings in all the other rooms to be covered with two coats of alabastine (white).

The whole of the sashes to be glazed with 16-ounce best quality sheet glass; glass to be well bedded in, puttied, bradded and back puttied and all glass to be left clean and perfect at the end of the work.

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" 27. Regulations Governing the Inspection of Condensed, Evaporated and Dried Milk
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